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VAGOTOMY AS A PROPHYLACTIC AND CURATIVE PROCEDURE IN PEPTIC ULCER

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As long as the cause of peptic ulceration remains unknown, which unfortunately will probably be a long time, the methods used for its correction will vary and so will the results. This variation will depend on the knowledge and experience of the internist and the surgeon, and on the response of the patient to the method used to reduce gastrospasm by decreasing the quantity and concentration of hydrochloric acid secreted by the stomach. Variation also depends on the ability to develop the patient's insight and knowledge of the association of peptic ulcer with nervous and emotional disturbances. Of even greater importance is the response of the individual patient's gastrointestinal mucosa to the digestive action of gastric secretion.

Only about 13% of the patients suffering from duodenal ulcer who have come to the Mayo Clinic in recent years have required surgical treatment. These patients had complications with which we are all familiar. In these cases the internists and surgeons advised operations since medical management was no longer feasible and was likely to be followed by untoward results. The other 87% of patients with duodenal ulcer have been provided with a medical regimen because of a short history of ulcer or no previous trial of good medical treatment and because no complications were present.

The patient with gastric ulcer needs a different program of treatment, for gastric ulceration differs in many ways from duodenal ulceration. When operation is necessary for gastric ulcer and the ulcerating lesion is removed by partial gastrectomy, the results are excellent in practically every case, recurrent ulceration never occurs, and the operative risk is less than 2%. Obviously there is no place for vagotomy alone in the treatment of such lesions, for it leaves behind an ulcerating lesion that has a 20% chance of becoming malignant. When vagotomy has been used, it has been followed by a high recurrence rate for benign gastric ulceration and a high incidence of troublesome digestive symptoms due to the atonic stomach, which does not empty satisfactorily. Happily, few surgeons continue to use vagotomy in the treatment of gastric ulcer.

We will confine our remarks for the most part, therefore, to the use of vagotomy in the treatment of duodenal ulcer and to ulcer recurring after either gastric resection or a gastroenterostomy. We will try to answer the following questions and a few others that will be suggested by the discussion. 1. Will vagotomy alone cause healing of duodenal and gastric ulcers? 2. Will vagotomy added to gastroenterostomy improve the results of gastroenterostomy alone for duodenal ulcer? How do these results compare with those of gastric resection with and without vagotomy? 3. Will vagotomy alone cause healing of gastrojejunal ulcers which may follow (*a*) gastroenterostomy or (*b*) gastric resection, and in what comparative proportions? 4. Which type of treatment, vagotomy, gastric resection, or reresection, yields better functional results and lower recurrence rates in cases of gastrojejunal ulcer after gastroenterostomy or gastric resection?

SURGICAL TREATMENT OF DUODENAL ULCER EXCLUSIVE OF VAGOTOMY

Before the results of vagotomy in the prevention and treatment of peptic ulceration are discussed, it is first necessary to describe the results of treatment of duodenal ulcer by pyloroplasty, gastroenterostomy, and gastric resection without vagotomy. Each of these procedures will cause the ulcer to heal and in most cases will prevent recurrence. This is especially true of properly performed gastric resection.

From the surgical standpoint, operations for chronic duodenal ulcer are directed toward relieving pyloric or duodenal obstruction due to pylorospasm associated with a small ulcer or to an obstructing ulcer. The aim is to reduce gastric acidity preferably to a relative achlorhydria, and, when possible, with pyloroplasty and gastric resection to remove the duodenal ulcer.

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In the early twenties, when 50% of patients with duodenal ulcer who came to the Mayo Clinic were operated on, many with small nonobstructing ulcers, pyloroplasty or gastroduodenostomy with removal of the ulcer frequently gave surprisingly good results with regard to relief of symptoms of ulcer. The operative risk was low, being about 1% or less. Unfortunately, since gastric acidity was not lowered, for the gastric antrum remained, and because some gastric stasis occurred, the ulcers recurred in a high percentage of cases and these operations were abandoned. In recent years, equally good results have been obtained in cases of ulcer of similar type by nonsurgical methods directed to the relief of pylorospasm and reduction of gastric acidity.

Gastroenterostomy has been used extensively and with splendid results in the treatment of chronic duodenal ulcer that caused varying degrees of pyloric obstruction; however, ulceration sometimes recurred. It recurred in from 4 to 6% of the clinic's cases [1] and in 10% of the cases reported by Lorenz.[2] These patients were operated on, for the most part, during and after World War I when the German and Austrian people had been subjected to the strains of a terrible war during which time, and for years afterward, they had received inadequate food, especially proteins, fats, and vitamins, for the maintenance of a normal nutritional state. Recurrent ulceration was proved in 18% of the cases and suspected in another 16% of the cases reported by Berg and Lewishon.[3] Although mention is not made of the nationality of the patients in the reports from Mount Sinai Hospital, it may be assumed that the majority were Jews, among whom recurrent ulceration is greatly increased.

When ulceration did not recur, the patient obtained complete relief of symptoms of ulcer, had few evidences of gastrointestinal dysfunction, and the duodenal ulcer always healed unless obstruction occurred at the gastrojejunal stoma. Then and only then might reactivation of the duodenal ulcer occur. There must be thousands of patients who have undergone gastroenterostomy and who are living normal lives today, and this operation continues to be used at the clinic in selected cases. It is now employed by us in about 10% of cases of duodenal ulcer treated surgically whereas gastric resection is used in about 80%.

Gastric resection took the place of gastroenterostomy in treatment of chronic duodenal ulcer at the clinic because the rate of recurrence was only about 2% after this operation. Furthermore, after operation the patient could eat and drink what he liked, within reason, and the results were, for the most part, excellent. Some untoward symptoms of minor character, however, sometimes occur. These, for example, are loss of, or inability to gain, weight, or symptoms related to rapid emptying of the stomach with distention of the intestine, either the jejunum or duodenum, to which it was anastomosed. This disturbance was called the "dumping syndrome." At first the risk of gastric resection for duodenal ulcer varied from 3.5 to 10%, but, as surgeons became more familiar with the indications for removing the duodenal ulcer, or leaving it, and for closing the duodenal stump so that leakage would not occur, the operative risk in properly selected cases and for properly executed operations dropped to approximately 1.5%.[4] As examples of this, we would like to quote from several recent reports.

In the series of McDonald, Gillespie, and LaBree [5] from the Duluth Clinic, presented at the last meeting of the Central Surgical Association, the mortality rate from gastric resection decreased from 6.3% of 93 patients operated on five to nine years ago to zero for the last 141 consecutive resections performed in the years 1948 through 1952. Follow-up studies in 68 patients five to nine years after operation showed that 94% were able to resume preoperative duties and that in the 1948-1952 series 92% of their patients had excellent results, with loss of weight occurring in 12% and 20% of their two series respectively.

Kline,[6] speaking at the meeting of the Southern Medical Association, Nov. 5 to 8, 1951, reported on 357 resections for benign lesions of the stomach and duodenum with a mortality rate of 0.3%. Kline had performed the operations in 250 cases, and the other operations were done under his direct supervision.

The experience at the Mayo Clinic is similar. Approximately 90% of our patients have excellent results, about 10% have mild digestive symptoms, not of the type caused by ulcer. The hospital mortality rate was 1.5% for the 409 gastric resections for duodenal ulcer performed in 1952. We have averaged about a 2% ulcer recurrence rate.

VAGOTOMY

The truest and best test of what vagotomy will accomplish in the way of healing of a peptic ulcer is to note its effect on duodenal and gastric ulcers in which no other operation is performed, for whatever reason, especially when the associated operations that have been used to prevent gastric stasis of themselves will cause such ulcers to heal. In our experience vagotomy alone in the treatment of duodenal ulcer has given excellent results in only 64% of cases, with evidence of failure to heal, or recurrence, in 16%.

Dragstedt and Woodward [7] reported on 234 patients with duodenal ulcers treated by vagotomy alone. Of these, 76% secured a good result, 9% a fair result, and 15% a poor result. These data were part of a statistical study of 509 patients who had undergone vagotomy and were followed one to seven years.

One of us (W. W.) used the operation in seven cases of gastric ulcer: In one the ulcer failed to heal, and in another it seemed to heal but recurred a year or so later. Gastric resection with removal of the ulcer was followed by an excellent result in both these cases. One patient

1. Gray, H. K., and Williams, R. R., Jr.: Results of Classic Operations for Duodenal Ulcer: 5 to 10 Year Follow-Up in 532 Cases, J. A. M. A. **141**: 509-513 (Oct. 22) 1949.

2. Lorenz, H., and Schur, H.: Unsere Erfahrungen über den Wert der Antrumresektion bei der Behandlung des Ulces pepticum, Arch. f. klin. Chir. **119**: 239-276, 1922.

3. Lewishon, R., quoted by Berg, A. A.: Mortality and Late Results of Subtotal Gastrectomy for Radical Cure of Gastric and Duodenal Ulcer, Ann. Surg. **92**: 340-359 (Sept.) 1930.

4. Gray, H. K.; Walters, W.; Priestley, J. T., and Waugh, J. M.: Report on Surgery of Stomach and Duodenum for 1951, Proc. Staff Meet., Mayo Clin. **27**: 585-592 (Dec. 31) 1952.

5. McDonald, O. G.; Gillespie, M. G., and LaBree, R. N.: Treatment of Duodenal Ulcer by Subtotal Gastric Resection: Ten Year Study, A. M. A. Arch. Surg. **67**: 444-450 (Sept.) 1953.

6. Kline, P. S.: The Complicated Peptic Ulcer, South. M. J. **45**: 713-716 (Aug.) 1952.

7. Dragstedt, L. R., and Woodward, E. R.: Appraisal of Vagotomy for Peptic Ulcer After Seven Years, J. A. M. A. **145**: 795-802 (March 17) 1951.

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with a high gastric ulcer and associated gastritis who has been followed for seven years has had an excellent result from vagotomy. Roentgenograms of the stomach have failed to show any evidence of recurring ulcer, although dilatation of his stomach had continued and so had the gastritis to the last gastroscopic examination four years ago. This was three years after the vagotomy. This patient was last examined at the clinic on May 13, 1953. Dragstedt and Woodward [7] reported results of 26 vagotomy operations on patients with gastric ulcers. Sixty-two per cent secured a good result, 15% a fair result, and 23% a poor result.

Whether healing of a gastric or a duodenal ulcer occurs after vagotomy alone is overshadowed by the fact that vagotomy has been combined with gastric resection and gastroenteric anastomosis routinely in recent years for gastric and duodenal ulcer by even the staunchest advocates of vagotomy.

In other words then, vagotomy alone will temporarily heal many duodenal and some gastric ulcers. Perhaps it would heal more if one could be sure that all the vagi were identified and cut, and if there was a more accurate test of the completeness of the vagotomy than we have in the insulin test. Portions of the nerves should be excised for microscopic examination. This has been done routinely on our service. In the cases in which one of us (W. W.) has operated personally, insulin tests have been done 10 to 14 days after operation and were repeated whenever the patient returned. Correlation is good in about 80% of the cases between the result of the test and the clinical results in general, but correlation is poor when recurring ulceration is present. By this we mean that many patients with recurrent ulcers had normal results in insulin tests.* Postoperative insulin tests have given normal results in 74.1% of our patients in which vagotomy with, and without, other gastric operations was performed.

Vagotomy with Gastroenterostomy Compared with Gastric Resection.—In our experience the incidence of recurrence after gastroenterostomy has been 5 to 6%,[1] compared with about 1.1 to 2% after gastric resection. It was our hope that vagotomy when combined with gastroenterostomy would reduce recurrence of ulcer, but unfortunately it has not in our experience. Hoerr,[8] of the Cleveland Clinic, recently reported 147 cases in which gastroenterostomy and vagotomy were performed for duodenal ulcer. Twelve per cent of the operations were considered failures because of persisting or recurring ulcer or symptoms of this. In 1952, one year before, this group reported only 7% failures in their cases. In 15% of the cases diarrhea occurred. Hoerr reported an excellent result (no ulcer pain, no dietary restrictions) in 68% of cases, and good results (no ulcer pain but bloating and vague abdominal distress) in an additional 17%. These latter patients were satisfied with their operation, he said. In 1951, Dragstedt and Woodward [7] reported on 219 patients with duodenal ulcers who were treated by vagotomy plus gastroenterostomy. Eighty-one per cent secured a good result, 10% a fair result, and 9% a poor result.

Adding vagotomy to gastroenterostomy not only has failed to reduce the incidence of recurring ulceration in our experience but has produced troublesome disturbances of motility, such as nausea, fulness, and diarrhea, in 10 to 17% of cases. In some cases another operation, gastric resection, has been required and in others diarrhea has persisted. These results do not compare favorably with those of gastric resection properly performed in properly chosen cases of chronic duodenal ulcer.

The risk of gastroenterostomy with vagotomy and the risk of gastric resection for duodenal ulcer are about similar in our experience. Recently we studied the reports of two series of cases from another institution in which the authors compared results of gastroenterostomy with vagotomy in 175 cases [9] of duodenal ulcer performed at a risk of less than 1% with those of gastric resection in 132 cases, 81 of which were cases of duodenal ulcer. The risk of gastric resection was 3.9%. In the latter group, two of the five deaths following the operation were due to cardiovascular accidents, the remaining were complications that probably would not have occurred had an attempt not been made to remove the ulcer. The "probable or possible" recurrence rate of 5.3% in the second group and the suspected recurrence rate of 9.2% could be attributed to the fact that the pylorus had not been removed but had been excluded in 28 of the 81 cases in which gastric resection was performed for duodenal ulcer. The delayed postoperative complications, and there were many, were due, we believe, to an unwise selection of cases and difficulties with the operation.

Vagotomy with Pyloroplasty.—Vagotomy plus pyloroplasty has largely been abandoned in favor of gastroenterostomy and vagotomy. Crile was an early advocate of pyloroplasty and vagotomy but changed to gastroenterostomy and vagotomy largely, we think, because gastric stasis was greater after pyloroplasty than when gastroenterostomy was performed in its stead. At the beginning of our studies on vagotomy we performed pyloroplasty with vagotomy a few times, but we too abandoned the operation for the reasons mentioned.

Vagotomy, Gastric Resection, and Re-resection in Cases of Gastrojejunal Ulcers Following Gastroenterostomy or Gastric Resection.—In 1947, one of us (W. W.),[10] with associates, after studying and reporting the results of vagotomy with and without associated gastric operations in 66 cases stated that vagotomy is a great contribution to the treatment of recurring ulcer, especially after gastric resection. This statement, which has been reiterated with the passage of years [11] and an in-

* Abnormal results of insulin tests, as used in this paper, indicate an increase in the quantity of free gastric acidity at the time of greatest hypoglycemia and may be interpreted as evidence of incomplete vagotomy. Normal results of insulin tests as used herein indicate that no increase in the gastric acidity occurred at the time of greatest hypoglycemia and may be interpreted as evidence of complete vagotomy.

8. Hoerr, S. O.: Duodenal Ulcer Treated by Subdiaphragmatic Vagus Resection and Posterior Gastroenterostomy: Interim Report, A. M. A. Arch. Surg. **67**: 436-443 (Sept.) 1953.

9. Lyons, C. K., and Grimson, K. S.: Complications Following Subtotal Gastric Resections Performed Since June, 1944, for Peptic Ulcer in 132 Patients, Surgery **28**: 350-367 (Aug.) 1950. Grimson, K. S.; Rowe, C. R., Jr., and Taylor, H. M.: Results of Vagotomy During Seven Years: Clinical Observations and Tests of Gastric Secretions, Ann. Surg. **135**: 621-636 (May) 1952.

10. Walters, W., and others: Anatomic Distribution of Vagus Nerves at Lower End of Esophagus: Relation to Gastric Neurectomy for Ulcer, Arch. Surg. **55**: 400-422 (Oct.) 1947.

11. Walters, W.; Belding, H. H., III, and Smith, M. K.: Comparison of Results in Personally Studied Cases in Which Gastric Vagotomy Was Performed with Those Reported to American Gastroenterological Association, Gastroenterology **19**: 623-638 (Dec.) 1951.

crease of the number of cases, continues to be true and we hope will be for many years to come. In a recent follow-up study of patients treated for gastrojejunal ulcer by vagotomy alone at the Mayo Clinic in 1945 through 1952, we found that healing of the ulcer had occurred in 70.5% of 78 traced cases of gastrojejunal ulcer after gastric resection and in 77.8% of 27 traced cases in which the ulcer followed gastroenterostomy (see table).

Dragstedt and Woodward [7] reported 30 vagotomies performed for gastrojejunal ulcers. Sixteen of these were for gastrojejunal ulcers following partial gastric resection. Eighty-one per cent of the 16 patients secured a good result, 6% a fair result, and 13% a poor result from the procedure. Vagotomy was performed on 14 patients for the treatment of gastrojejunal ulcer following gastroenterostomy. Sixty-five per cent of these patients secured a good result, 14% a fair result, and 21% a poor result. However, gastric resection alone, at the Mayo Clinic, in 1945 through 1952, gave excellent results in 86.5% of 111

Results of Gastric-Resection and Vagotomy for Gastrojejunal Ulcer, 1945-1952

	No.	Mortality No.	Mortality %	Traced Cases, No.
Vagotomy	143	3	2.1	125
Gastric resection	158	4	2.5	118

	Traced Cases, No.	Results, % Excellent	Unsatisfactory	Poor
Vagotomy alone				
After previous gastric resection	78	70.5	11.5	18.0
After previous gastroenterostomy	27	77.8	11.1	11.1
Total	105	72.4	11.4	16.2
Vagotomy and gastric resection	11	90.9	9.1	....
Vagotomy and other operations	9	44.5	22.2	33.3
Total for all types of vagotomy	125	72.0	12.0	16.0
Gastric resection				
After previous gastric resection	7	57.1	14.3	28.6
After previous gastroenterostomy	111	86.5	4.5	9.0
Total	118	84.7	5.1	10.2

traced cases in which gastrojejunal ulcer developed after gastroenterostomy. Results were poor in 9.0% of our traced cases in which gastric resection was employed for gastrojejunal ulcer following gastroenterostomy and in 11.1% of such cases in which treatment consisted of vagotomy alone.

We have seen extremely large gastrojejunal ulcers develop after adequate gastric resections and heal after vagotomy; the operative risk is approximately 1%. This result is far better and the operative risk is much lower than that of another gastric resection. But vagotomy does not cure all such gastrojejunal ulcers, for in some cases removal of most of the stomach and a second excision of segments of vagus nerves have been required to prevent recurrence of ulcer. In one of the two brief case reports that follow, the vagus nerves had been cut transthoracically and in the other they were reported to have been cut transabdominally at the time of the first gastric resection. The first case illustrates repeated gastric resection and second vagotomy for recurring gastrojejunocolic fistulas.

12. Druckerman, L. J.; Weinstein, V. A.; Klingenstein, P., and Colp, R.: Duodenal Ulcer Treated by Subtotal Gastrectomy With and Without Vagotomy, J. A. M. A. **151**: 1266-1269 (April 11) 1953.

REPORT OF CASES

Case 1.—The patient was a man 50 years old when he first came to the clinic in 1949. In 1927, symptoms of ulcer had first appeared. In 1934, a perforated duodenal ulcer was closed elsewhere, and in 1935 another perforation made necessary another closure. In May, 1947, gastric resection was performed because of hemorrhage and pain, and in March, 1948, another gastric resection and transabdominal vagotomy were performed for gastrojejunal ulcer.

In January and February, 1949, multiple gastrojejunocolic fistulas and multiple gastrojejunal ulcers developed and the patient consulted the clinic. Results of insulin tests were abnormal. A third resection of the stomach was performed with closure of the colonic fistulas and cautery puncture of the colon. One month later the colonic stoma was closed.

In May, 1949, pain recurred and roentgen therapy to the stomach was without benefit. In August, because of pain and a gastrojejunocolic fistula, all but a small portion of the fundus of the stomach was removed, the colonic fistula was closed, and transabdominal vagotomy was carried out. The patient would not allow postoperative intubation of his stomach, so no gastric acidity studies could be made.

On Feb. 17, 1951, the patient was found to have pulmonary tuberculosis and was admitted to a sanatorium. On March 3, his wife wrote that his stomach condition was good, and on Dec. 10, 1951, a letter reported that he was dismissed from the sanatorium in June and was doing well. The patient returned to the clinic on Dec. 31, 1952, remaining until May 19, 1953, for treatment of pulmonary tuberculosis. He had no indigestion and the gastrointestinal tract was functioning well. When last seen on May 19, 1953, he had no gastrointestinal disturbances.

The second case illustrates jejunal ulcer following gastroenterostomy, gastrojejunal ulcer following gastric resection, and jejunal ulcer following vagotomy.

Case 2.—The patient, a man aged 60, came to the clinic on May 19, 1936. At that visit, posterior gastroenterostomy was performed for perforated duodenal ulcer with hemorrhage. The patient was free of symptoms until November, 1941, when pain and hemorrhage recurred. These symptoms were persistent and continued. On Jan. 17, 1944, the gastroenteric anastomosis was disconnected, gastric resection with posterior Polya-type anastomosis was performed, and jejunojejunostomy was carried out for acute jejunal ulcer.

Periodic attacks of pain with tarry stools began late in 1945, and in October, 1946, the patient had hematemesis, tarry stools, and epigastric pain. On Nov. 21, 1946, transthoracic vagotomy was performed for jejunal ulcer. Pain was relieved, but massive hemorrhages occurred in May, July, and August, 1948. Roentgenograms made on Aug. 13, 1948, revealed evidence of a jejunal ulcer, but roentgenograms made on Aug. 30 and Sept. 3 did not show it. Results of insulin tests were abnormal on Aug. 17, 1948, normal on Aug. 26, and abnormal on Sept. 3.

The patient returned May 5, 1950, because of melena and hematemesis. He had had no ulcer pain. An insulin test on May 26 gave an abnormal result, and the concentration of free hydrochloric acid varied from 12 to 80 (Töpfer's method) during the insulin test. On June 2, 1950, the gastrojejunal anastomosis was disconnected, a portion of the jejunum containing the ulcers was resected, and end-to-end jejunojejunostomy was performed. Further resection of the stomach, with an anterior Balfour-Polya type of anastomosis and bilateral transabdominal vagotomy, was performed. The insulin test on June 2 gave a normal result and the concentration of free hydrochloric acid in the gastric contents varied from 0 to 8 during the test.

After this operation the patient had no more gastrointestinal disturbance or gastrointestinal bleeding, but he died Dec. 18, 1950, from cerebral hemorrhage.

Since vagotomy is so effective in the treatment of recurring ulceration after gastric resection, the question is frequently asked: "Why is not vagotomy added to gastric resection to prevent recurring ulceration?" Druckerman, Weinstein, Klingenstein, and Colp [12] have recently re-

ported 385 consecutive cases of duodenal ulcer, in 220 of which only gastric resection was performed and in 165 gastric resection with vagotomy. Whereas a recurrence rate in the former group was 4.5%, with an additional 1% of cases in which recurrence was suspected, no recurrences had developed to date in the group in which vagotomy was performed with gastric resection. It must not be forgotten, however, that in the experience at the Mayo Clinic the average interval between gastric resection and the development of gastrojejunal ulcer has been approximately three and a half years. Druckerman and co-workers [12] have not stated the nationality or race of their patients, that is, whether most of them were Jews. They reported that postoperative morbidity and complications were about two and one-half times greater in the group subjected to vagotomy. This was due to an increase in postoperative pulmonary complications, diarrhea, and vomiting. Of their 218 traced patients who had undergone resections, 195 were well and 8 improved (93%), while of the 161 traced patients who had undergone resection and vagotomy 156 were well and 2 were improved (98%). Prolonged moderate diarrhea occurred in 7% of the cases of the latter group after the combined operation.

Because of the persistent troublesome disturbances in motility and the lower recurrence rate of 2% after gastric resection alone for duodenal ulcer at the Mayo Clinic, we do not perform simultaneous vagotomy and gastric resection except in selected cases. The patients selected for this procedure, as recommended by Johnson and Orr,[13] have unusually high concentrations of gastric acids or hereditary racial characteristics that indicate that they might be candidates for recurring ulceration.

Since vagotomy is effective in preventing recurrences of ulcer after resection, the question that immediately follows is: "Why isn't vagotomy effective in preventing recurrences after gastroenterostomy?" Unhappily in our experience, and in that of some others, vagotomy has not prevented recurrences in some cases; for example, Crile reported recurrence in 6% of 400 cases, Pollock [14] in 8% of 462 collected cases, and Hoerr [5] in 12% of 146 cases from the Cleveland Clinic in 1953. Probably the reasons for this are that the hormonal influence of the pylorus remains, the stomach retains food longer, and a greater quantity of acid is secreted and retained within the stomach. Evidence of this is the higher incidence of relative achlorhydria in the resected stomachs (72%) as compared to 34 to 36% of the patients who had gastroenterostomy and vagotomy. It seems logical, therefore, to assume that the rate of recurrence of ulcer would be lower after resection.

COMMENT

We would not close this discussion without emphasizing that in the treatment of gastrojejunal ulcer, especially after gastric resection, vagotomy is an operation that produces amazingly fine results in about 70% of cases at the extremely low operative risk of about 1% and that these results are far superior to those of reresection. In a few cases it has been necessary to combine further resection to almost total gastrectomy with vagotomy to prevent recurrence of ulcers.

One of us (W. W.) has used vagotomy combined with gastroenterostomy for middle-aged men who had high concentration of acids and large duodenal ulcers when the risk of removal or allowing them to remain as a part of a gastric resection was high. Under these circumstances the results from both our standpoint and the patient's have been satisfactory. In similar cases gastroenterostomy without vagotomy has been oftenest employed relatively satisfactorily. In neither case, however, have the results from all standpoints been equal to those of the average of other patients on whom gastric resections were performed by the various surgeons operating on patients with peptic ulcer at the Mayo Clinic. For this reason we and our colleagues at the Mayo Clinic have favored gastric resection in the treatment of chronic duodenal ulcer when operation was indicated and when resection could be done safely. We have continued to use gastroenterostomy and gastroenterostomy with vagotomy in cases in which gastric resections seemed to carry an unreasonable risk when compared to that of gastroenterostomy. The so-called exclusion operation, in which the pylorus is allowed to remain even though the mucous membrane is removed in the course of gastric resection, is practically never used at the clinic for large duodenal ulcers because of the high incidence of gastrojejunal ulcers reported by others when the pylorus is left.

Excellent summaries of large series of cases of peptic ulcers have appeared in 1952 in the *Lancet* by Pulvertaft,[15] Johnson and Orr,[13] and Pollock,[14] and in the *British Medical Journal* by Ogilvie. These bear out our conclusions and are recommended as very interesting reading.

13. Johnson, H. D., and Orr, I. M.: Surgical Policy for Peptic Ulcer, Lancet **1**: 253-257 (Feb. 7) 1953.

14. Pollock, A. V.: Vagotomy in Treatment of Peptic Ulceration: Review of 1,524 Cases, Lancet **2**: 795-800 (Oct. 25) 1952.

15. Pulvertaft, C. N., quoted by Ogilvie, H.: Problem of Peptic Ulceration, Lancet **1**: 555-560 (March 21) 1953.

Laboratory Tests vs. Stethoscopes.—You might find it strange that I, as a pathologist, should be asking for a reduction in the number of laboratory tests. I believe that in the cases of difficult and unusual problems any amount of laboratory work is justified, but unimportant testing in the general run of cases is a waste of the laboratory worker's life, and the time spent performing this almost useless work might better be devoted to the serious diagnostic problems. I feel strongly that the routine ordering of tests should be abolished. . . . The modern laboratory aids encourage careless bedside study. I find physicians who shout for icterus index reports, yet have never lifted the eyelids of the patients; who speak glibly of hemorrhage from the stomach and bowel, but who have never looked at the stool or gastric vomitus. It is quite common for these very dark items to be mistaken for blood by nurses who chart them as hemorrhage. I find the practitioner timid about suggesting Addison's disease in the presence of weakness, anemia, emaciation, skin bronzing and very low blood pressure until he knows the sodium and potassium values or the output of 17-ketosteroids. Did Addison have such a test? Did Graves have basal metabolism reports? While the B. M. R. is interesting, it is border-line in many non-toxic thyroid cases and scarcely more informative than checking the pulse rate.—E. Kellert, M.D., Laboratory Tests vs. Stethoscopes, *American Practitioner and Digest of Treatment*, July, 1953.

MANAGEMENT OF THE PREGNANT DIABETIC

Edward Tolstoi, M.D., William P. Given, M.D.
and
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In 1950 we published the results of 131 pregnancies in 106 diabetic women. These were obtained from the hospital records and represented the work of various members of the staff.[1] The data revealed that toxemia was present in 48% and ketosis in 16.8% and that over 50% of the babies were over size as judged by the average clinic weight of 3,450 gm. Our total fetal loss was 30%. This included 10 spontaneous and 4 therapeutic abortions, 4 immature infant deaths, and 1 ectopic pregnancy. Our fetal mortality was 24.8% consisting of 6 premature and 22 mature infants. It was our conclusion that the toxemia, ketosis, and excessively large fragile infant were the principal causes for our fetal loss, and no doubt our lack of knowledge concerning other intangibles was a contributing factor. Since the pregnant diabetic presents a number of problems, we reasoned that the management of these patients by a group—each member devoted to his field—might be more effective and productive of better results. We were influenced in this respect by Priscilla White whose clinic is so organized. Consequently, such a group was established, and space was provided in the Women's Clinic of the New York Hospital, where all of us could work together at the same hours and be available for the discussion of any problems that arose. This paper reports our procedure and the results with 72 cases treated during the past three years.

ANTEPARTUM CARE

Most diabetic women before assuming the responsibilities of motherhood want to know (*a*) whether pregnancy is safe for them, (*b*) what the chances are for a living baby, and (*c*) whether the child will have diabetes. On the basis of our experience, we tell the patient that the healthy diabetic runs no greater risk to herself as far as her life is concerned than the nondiabetic and that she has an 80% chance of having a living baby. As to the possibilities of diabetes developing in the child, we can only quote the work of others that the inheritance of diabetes follows the Mendelian laws.

After the initial examination and as soon as possible after conception, the internist and the obstetrician jointly examine the patient every week. At each visit the patient is weighed, and the abdomen is palpated to determine the size, presentation, and position of the fetus. The height of the uterus is noted. The fetal heart sounds are sought, and their character is recorded. The blood pressure is taken, the eyegrounds are studied, and the extremities, as well as the abdominal wall, are examined for edema. The urine is examined weekly for albumin, acetone, and sugar. We have drawn blood weekly for various investigations. No hormones were used. Because of the tendency of the pregnant diabetic toward fluid retention and clinical edema, patients were given 6 to 8 gm. of ammonium chloride daily for four days of each week. In addition, we restricted the salt intake by asking the patient not to use salt in her cooking or at the table. The latter procedures were recommended at the 16th week.

The diabetes was treated by the clinical method. The patient is permitted a self-selected, unweighed, and unmeasured diet to suit her taste and appetite. Dietary restriction was urged in the overweight or when there was rapid gain in weight. Optimal weight gain should be the same as for the nondiabetic patient. With this liberal diet we usually prescribe one daily dose of isophane (NPH) insulin or occasionally a mixture of regular and protamine zinc insulin in quantity sufficient to: (*a*) maintain the patient free from the symptoms of diabetes (thirst, frequency, nocturia, and polyuria), (*b*) maintain or induce the gain of small amount of weight, and (*c*) keep the urine acetone-free.

In order to determine the optimum insulin dosage, we question the patient as to the presence of symptoms of diabetes or those of hypoglycemia, and, if the former are present, we increase the dosage by 5 units until the symptoms disappear. On the other hand, if hypoglycemic symptoms are present, the insulin is lowered by 5 units until they clear. The insulin requirements are different for each patient, and it has been our experience that, as a general rule, they increase with the progression of the pregnancy. Our studies have shown that the absence of the symptoms of diabetes is a dependable criterion, per se, of control. Since we obtained blood at weekly intervals for certain investigations, we determined the fasting blood sugars also, and it is of interest to note how closely they approached normal values when the clinical criteria for control were achieved.

Provided no complications develop the patient is followed in this manner until about the 35th week of her pregnancy, and then she is admitted for the evaluation of the type and time of delivery. Roentgenograms of the patient's abdomen and pelvis are made. Also, an attempt is made to estimate the size of the infant. This has proved difficult at times because of the edema of the abdominal wall or the presence of a large amount of amniotic fluid. (It may be generalized that about 50 to 60% of the patients will be delivered prematurely by cesarean section, as this appears the most practical method of delivery.) Spontaneous labor and vaginal delivery in the healthy diabetic are permitted when (*a*) there is no cephalopelvic disproportion, (*b*) a short labor is anticipated, (*c*) obstetric conditions indicate the patient is ready for labor, and (*d*) diabetes is of short duration.

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1. Given, W. P.; Douglas, R. G., and Tolstoi, E.: Pregnancy and Diabetes, Am. J. Obst. & Gynec. **59**: 729, 1950.

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LABOR

During labor the patient is given 5% dextrose in water intravenously at the rate of 2,000 cc. every 12 hours and 1 unit of regular insulin for every 2 gm. of sugar in the infusion. The urine is examined at hourly intervals for acetone and sugar. If only acetone is present more dextrose is given. If both sugar and acetone are present, more insulin is given depending on the qualitative reaction for dextrose, usually 25 units for a 4 plus and 15 units for a 2 to 3 plus. Glycosuria alone is not treated. Analgesic agents are used sparingly, as the infant of a diabetic mother is often immature despite its size and tolerates respiratory depressants poorly. General anesthesia has been avoided. Low spinal and pudendal block are preferable. Wide episiotomy and low forceps are recommended.

COMPLICATIONS

There are four complications to which the pregnant diabetic is specifically exposed. These are preeclampsia, progression of hypertension with the development of albuminuria and retinopathy, hydramnios and edema without hypertension, and ketosis with or without acidosis. Death of the infant in utero may occur with any of these complications, and, though they may occur at any time in the pregnancy, they are most frequent after the 30th week. We have been impressed by the sudden need for more and more insulin to keep the patient ketone-free. Whereas a certain dosage sufficed prior to the 30th week, it was definitely inadequate after, and the insulin dosage had to be increased at times to twice the amount to obtain an acetone-free urine. Whenever any one of these serious situations appears, the patient must be hospitalized. The ketosis, although we regard it as a real emergency, offers no problem. A precipitating cause is sought. If it is due to an infection, appropriate antimicrobial therapy is instituted and the ketosis itself is treated as follows: 1. The urine is examined every half hour for sugar and acetone. If necessary, a catheter is inserted into the bladder, thus facilitating the collection of urine. 2. Twenty-five units of regular insulin are given every half hour as long as acetone continues to appear. The administration of insulin is continued until three consecutive acetone-free urines are obtained. 3. Fluids, such as fruit juices, water, milk, and broth, are given by mouth as tolerated whenever practical. 4. If the patient cannot retain or take fluids, an infusion of 5% dextrose in water is given at the rate of 2,000 to 3,000 cc. every 24 hours.

Usually with this technique of combined therapy both the infection and ketosis respond and the patient may resume her usual diabetic regimen. Unfortunately, we have no specific therapy for preeclampsia, hypertension, and hydramnios. Consequently, our treatment is empirical; it includes bed rest, sedation, and salt and fluid restriction. We follow the height of the fundus, estimate the tenseness of the abdomen, and measure the abdominal circumference to determine increases in amniotic fluid. For such increases we have given meralluride (Mercuhydrin), and, though in an occasional case the result was quite dramatic, it was by no means consistent. Recently, Nelson, Gillespie, and White [2] have suggested withdrawing some of the amniotic fluid. It seems that nothing can be predicted from all this empiric and unsatisfactory therapy, and one can do no more than hope that the infant will not die in utero until delivery can be accomplished. The only real cure as far as we are aware is the termination of the pregnancy.

If any of these complications occurs between the 30th and 32nd week of pregnancy, one is confronted with a most difficult decision. In considering delivery, one must weigh the dangers of prematurity against those of intrauterine death. We have been unable to set a definite time for delivery; each patient must be evaluated individually. During this most critical period, the patient with complications is observed very carefully and frequently. Ambulatory care is unsatisfactory. The fetal heart sounds are listened for, and the patient is questioned as to the degree of motility of the infant. As long as these are present delivery is postponed in the hope that each additional day or week will provide a more mature infant. However, when there is appearance or increase of retinal hemorrhages, progression of the toxemia, and/or an increase in the amniotic fluid, the patient is delivered promptly, usually by cesarean section.

The problem of management is most difficult between the 32nd and 34th week. Prior to the 32nd week, the infant is often not viable; consequently not much is to be done. After the 34th week, the problem of when to deliver is not as difficult when toxemia, hydramnios, or hypertension with progressive vascular changes are found. The patient is delivered without any delay, usually by cesarean section. While this offers the best chance for a viable infant, it is by no means a guarantee; thus, de-

TABLE 1.—*Weekly Fasting Blood Sugar Levels of Pregnant Diabetic Women Whose Insulin Dosage Was Regulated Only by Symptoms*

Patient	Duration of Diabetes, Yr.	Type of Insulin, Units	Weekly Fasting Blood Sugar Levels, Mg./100 Cc.															
1	3	NPH, 30	108	204	177	137	135	186	243	196	184	208	177	202	144	135	191	...	...
2	16	NPH, 95	91	99	43	60	80	115	82	72	120	107	207	156	141	100	145	225	210
3	15	NPH, 34	104	90	108	158	169	114	140	171	132	108	137	...	...	...	...	...	...
4	20	R, 54 P, 27	... 225	... 59	... 229	... 66	... 59	... 115	... 121	... 144	... 147	... 204	... 181	... 88	... ...	... ...	... ...	... ...	... ...
5	16	R, 30 P, 15	... 154	... 156	... 68	... 85	... 76	... 144	... 97	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...
6	10	P, 60	93	74	94	100	116	69	92	72	141	179	117	134	66	154	112	123	...

2. Nelson, H. B.; Gillespie, L., and White, P.: Obst. & Gynec. **1**: 219, 1953.

livery should be achieved in the diabetic whose pregnancy is complicated by toxemia, hydramnios with edema, and hypertension and progressive retinal changes. After the 34th week there is little gained in waiting, and a chance for a viable infant may be lost by delay. It may be stated that cesarean section is the method of choice in delivering an excessively large infant or a breech regardless of any complications.

CESAREAN SECTION

Cesarean section is done with the patient under local anesthesia. During the operation, the patient is given 1,000 cc. 5% dextrose in water intravenously, and after about 250 cc. have been given 25 units of regular or crystalline insulin are given hypodermically. If desired, the insulin may be given in the infusion. When the operation is over, a retention catheter is placed in the bladder and the diabetes is treated on the basis of the results of the urine examinations for sugar and acetone done at two hour intervals. If both sugar and acetone are present, regular insulin is given in doses determined by the glycosuria. A 4 plus specimen calls for 25 units and a 2 to 3 plus for 15 units; a negative sugar specimen must be covered with 200 cc. of orange juice. If the patient cannot take fluids by mouth, a 5% dextrose infusion of 1,000 cc. should be given. Usually, if both sugar and acetone are present postoperatively, the latter clears after two or three doses of regular insulin, and, if there is no thirst, the glycosuria is not of any concern. The catheter is removed 24 hours postoperatively, and the patient is offered food to suit her desire. The predelivery type of insulin dosage is reduced by 25 to 50%, and the optimum amount is then determined by the patient's symptoms. If she has symptoms of diabetes, the insulin is increased by 5 units every three days until the symptoms disappear. If, however, the patient has insulin reactions, the dosage is reduced by 5 units the next day, and this reduction continues as long as reactions occur. An asymptomatic glycosuria is disregarded, and we wish to emphasize that, in spite of a continuous glycosuria postoperatively, the wound healing was no different from that of a nondiabetic patient. We have had no infected wounds.

TABLE 2.—*Total and Neonatal Fetal Loss in Seventy-Two Diabetic Patients*

	Number	%
Abortions, under 500 gm.	7	9.7
Immature, 500-1,500 gm.	3	4.2
Premature, 1,500-2,500 gm.	2	2.7
Mature, over 2,500 gm.	11	15.2
Total	23	31.8
Deaths of viable fetuses		
In utero, 4	16	22.1
In nursery, 12		

THE NEWBORN

Infants born to diabetic mothers are frequently of excessive size; their activity is poor; their cry is weak; and their respirations are at times established with difficulty. The babies may reveal a brawny generalized edema, cyanosis, icterus, and dyspnea. A roentgenogram often shows cardiac enlargement, and, though the blood cell count is normal, nucleated red blood cells may be found. Among these infants there is a high incidence of atelectasis and pneumonia. Intracranial hemorrhage is common. The livers are apt to be enlarged. The blood sugar values may have a wide range but are not different from the values of infants born to nondiabetic mothers. Because these infants are so fragile, they are treated as premature infants regardless of their size.

When delivery is planned a pediatrician is in attendance, and he assumes complete charge as soon as the child is delivered. Our procedure for the care of these infants includes several important aspects. 1. The airway is cleared. Repeated suction at definite intervals is used to clear the air passages of mucus and amniotic fluid. 2. After the passages have been cleared, oxygen is given and the child placed in an incubator with an oxygen inflow. 3. The child is examined and fluoroscopy is done. If the heart is enlarged or the liver is felt a distance below the costal arch, 0.035 to 0.04 mg. per kilogram of body weight of digitoxin is given as a digitalizing dose and 0.0035 mg. per kilogram daily as a maintenance dose. 4. The stomach is aspirated every 3 hours. It is best to keep the stomach as empty as possible so that the child will not regurgitate fluid and aspirate it subsequently. 5. The infant is also given 100,000 units of penicillin and 40 mg. of dihydrostreptomycin per kilogram of body weight every 24 hours. The antibiotics are administered for a week or 10 days. If the child is markedly edematous, fluids are withheld for 24 to 48 hours. And, during this period, there is often a weight loss of 350 to 500 gm. The child is disturbed as little as possible but is examined in the incubator for the character of the heart sounds and liver size. After food is withheld for the first 48 hours, 15 cc. of 5% glucose is given by nipple if the baby will take it, otherwise by stomach tube. Often the latter method is used as these babies eat poorly. They also tend to be inactive. About one or two days of feeding with glucose, depending on how active the child is, is followed by one-half skimmed or skimmed milk formula in 10 cc. quantities every 3 hours. The skimmed milk feedings are continued for two or three days, and then an evaporated milk formula is prescribed. This is made up of two parts of water and one part of evaporated milk and 5% Dextri-Maltose no. 2 (salt-free) containing about 70 calories per 100 cc. The fluid replacement is the same as for a normal infant, that is, 100 cc. per kilogram of body weight by the third day and 150 cc. per kilogram by the seventh day.

The child is observed frequently. If it is active and eats well, it may be removed from the incubator for a short period. If its color, activity, and respirations remain good, the periods out of the incubator may be increased until the infant can be removed from it entirely. The duration of incubation varies with each baby and depends chiefly on its reactions outside of the incubator. Usually, the active babies who eat adequately do not need long care in the incubator. It must be appreciated that this plan is subject to modification, because of ever-changing conditions. If one has guidance to some definite procedures, however, he can follow them until his own experiences and judgment dictate otherwise.

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RESULTS

At the time this report was prepared, 72 patients had been treated. All of the mothers are alive. Twenty-four, or one-third, have had diabetes for over 13 years. The total and neonatal fetal losses are summarized in table 2.

It is significant that, of the infants lost, the mothers' course was complicated by one or more of the four complications shown in table 3. Furthermore, when any of these complications occurred, and that was frequently, the delivery was affected in one of the four manners shown in table 4.

COMMENT

From the results reported by other workers in this field, the total fetal wastage is about the same. The greater differences in figures are among the viable fetuses. Nelson, Gillespie, and White [2] have a 10% loss of fetuses over 28 weeks of gestation; Reis, De Costa, and Allweiss,[3] 13.6%; Miller,[4] 14.7%; Hall and Tillman,[5] 18.3%; Pedowitz and Shlevin,[6] 20.7%; and ourselves,[1] 22.2%. There are many other reports, but we have limited our discussion to those having a viable fetal mortality of 25% and less.

In the treatment of these patients, there were areas of agreement and disagreement among the various workers in matters of technique and methods of reporting. Placing these factors in sharp focus may be clarifying. All workers agree on several points. 1. Ketosis and ketoacidosis must be avoided and, when present, treated vigorously. 2. Premature termination of the pregnancy as a rule is advisable, often by cesarean section. All are aware that, though this procedure is no guarantee for a viable baby, it frequently offers the best chance. 3. Skilled pediatric care is necessary in the neonatal period, especially with particular understanding of the treatment of the premature infant.

The areas of disagreement are (*a*) the use of hormones, (*b*) the classification of the severity of the diabetes, (*c*) the type of diabetic care, and (*d*) the evaluation of results. With so many variables; there are bound to be differences of opinion, and the better results are attributed to the particular techniques employed. Thus, Nelson, Gillespie, and White,[2] the only group that used hormones, consider them a valuable contribution to a greater fetal salvage. Their loss was only 10%. Reis and his associates [3] and Miller [4] used no hormones, and these workers reported losses of 13.6% and 14.7%, respectively. Our results are not so good in view of the fact that we had a perinatal mortality rate of 22.2%. We did not use hormones. At first glance this difference is quite striking, but it is more apparent than real. Nelson, Gillespie, and White [2] eliminated 14 patients from their viable group because of therapeutic abortions done for preexisting retinal and renal disease. We did not exclude such patients, as we performed no therapeutic abortions. Indeed, we were fully aware of the poor prognosis, and when occasion indicated we placed the issue frankly before the prospective mothers. Since they wished to carry on, we acquiesced. As expected, though some of the babies were viable, they died shortly after birth. These were losses, and they were so recorded. As to the classification of the diabetes, what is severe diabetes? Is it a diabetic who goes on for years requiring 15 to 20 units of insulin for satisfactory regulation by any accepted technique and who develops retinopathy and other manifestations of diffuse vascular disease? Is it the diabetic without vascular disease who requires 50 to 75 units, or more of insulin to avoid ketosis? Then again, how would one classify two patients of about the same age and duration of diabetes with or without vascular disease whose insulin requirements vary, one requiring 25 units and the other 75? It becomes obvious from such questions that classification is difficult. We agree that vascular disease in a diabetic is a serious complication, but we also submit that the management of diabetes in such cases is no problem. It is a problem, however, in a young patient who has no vascular disease but who has a great tendency toward ketosis and requires large doses of insulin to remain ketone-free. It seems to us that this is the severe diabetic and that, in evaluating the severity of diabetes, some persons have been influenced by the degree and extent of vascular disease. They have been measuring the concomitants or sequelae of diabetes and not severity as judged by difficulty in management.

TABLE 3.—*Frequency of Complications in Seventy-Two Pregnant Diabetic Patients*

Complication	Number	%
Preeclamptsia	13	18.1
Hypertensive disease	13	18.1
Ketosis	20	27.6
Hydramnios	24	33.3

TABLE 4.—*Termination of Pregnancy in Seventy-Two Diabetic Patients*

Termination	Number	%
Abortion	7	9.7
Induction	11	15.5
Spontaneous deliveries	17	23.6
Cesarean section	37	51.2
Total	72	100.0

As the treatment of the pregnant diabetic is complex, any simplification would be a step forward, provided the results were not sacrificed. Since our total fetal loss is not significantly higher than that of others and since our results were achieved without the use of hormones and with safe practical technique for the treatment of the diabetes, we have adopted the simpler methods. We are not satisfied with our results, however, and are constantly evaluating them and those of other workers and searching for information that will enable us to propose a more definite routine as well as to deliver more living infants.

SUMMARY AND CONCLUSIONS

Infant survival in the pregnant diabetic (comparable to the more favorable results reported) can be achieved (*a*) without hormone therapy and (*b*) by employing the clinical method for the treatment of diabetes. In treating pregnant diabetic women, ketosis must be avoided. This complication is, however, understood and can be treated.

3. Reis, R. A.; De Costa, E. J., and Allweiss, M. D.: Diabetes and Pregnancy, Springfield, Ill., Charles C Thomas, 1952.

4. Miller, M., in Pedowitz, P., and Shlevin, E. L.: The Pregnant Diabetic, Bull. New York Acad. Med. **28**: 440, 1952.

5. Hall, R. E., and Tillman, A. J. B.: Diabetes in Pregnancy, Am. J. Obst. & Gynec. **61**: 1107, 1951.

6. Pedowitz, P., and Shlevin, E. L.: The Pregnant Diabetic, Bull. New York Acad. Med. **28**: 440, 1952.

Complications, such as toxemia, hydramnios, and hypertension, in about the 30th week or shortly thereafter are most serious. There is no specific treatment for them.

After the 32nd week, depending on complications, premature delivery offers the best, but by no means certain, chance of fetal survival. The exact time for delivery cannot be determined from any specific or past experience. Cesarean section is the procedure of choice in terminating the pregnancy of the diabetic patient with complications and an excessively large infant. It is the most practical approach but does not guarantee a living child. Experienced pediatric care and treatment of the newborn as a premature infant is imperative.

2 E. 94th St. (28) (Dr. Tolstoi).

IS STELLATE GANGLION BLOCK OF VALUE IN STROKE?

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and
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Millikan, Lundy, and Smith and Alvarez [1] have suggested that stellate ganglion block is of no value in patients suffering cerebrovascular accident. Previous reports disagree with this point of view.[2] Because of the doubt cast by these reports, we consider it timely to report our experience as a means of stressing the value of this therapeutic measure in stroke.

In 1947, one of us (J. E. R.) began to do stellate ganglion blocks on stroke patients. By 1949, we had accumulated sufficient experience and had seen enough good results following this therapy to be interested in a controlled study. An arrangement was made by which every other patient admitted to the neurological wards of the Philadelphia General Hospital with a diagnosis of cerebrovascular accident could be subjected to stellate ganglion block as often as indicated. In April, 1949, 37 such patients were admitted. Ganglion blocks were effected in 18 patients, and, of these, 9 (50%) left the hospital alive, and the other 9 died. Of the 19 patients who did not receive blocks only 5 (26%) left the hospital alive. The series was too small to be statistically significant, but the results were so encouraging that mortality data on patients admitted during the same period in 1948 (when no blocks were done) were obtained for comparison. In 37 consecutive admissions 8 patients (22%) left the hospital alive. In this series of cases we took the death rate of stroke patients in the hospital as a yardstick, and the figures heavily favor the treated cases.

From the departments of anesthesiology, Philadelphia General, Doctor's, Stetson, and St. Joseph's hospitals.

1. (*a*) Millikan, C. H.; Lundy, J. S., and Smith, L. A.: Evaluation of Stellate Ganglion Block for Acute Focal Cerebral Infarcts, J. A. M. A. **151**: 438-440 (Feb. 7) 1953. (*b*) Alvarez, W. C.: Stellate Ganglion Block of Dubious Value for Stroke, Editorial, Mod. Med. **21**: 69 (Feb. 15) 1953.

2. Leriche, R., and Fontaine, R.: Infiltration of the Stellate in Cerebral Embolism, Rev. de Chir **74**: 755-758 (Dec.) 1936. Mackey, W. A., and Scott, L. D. W.: The Treatment of Apoplexy by Infiltration of Stellate Ganglion with Novocain, Brit. M. J. **2**: 1-4 (July 2) 1938. Risteen, W. A., and Volpitto, P. P.: Role of Stellate Ganglion Block in Certain Neurologic Disorders, South. M. J. **39**: 431-435 (May) 1946. Gilbert, N. C., and de Takats, G.: Emergency Treatment of Apoplexy, J. A. M. A. **136**: 659-665 (March 6) 1948. Blain, A.: Cervical Sympathetic and Stellate Ganglion Block in Apoplexy, Preliminary Note on Indications and Technique, J. Michigan M. Soc. **47**: 1356-1358 (Dec.) 1948. Amyes, E. W., and Perry, S. M.: Stellate Ganglion Block in the Treatment of Acute Cerebral Thrombosis and Embolism: Report of 44 Cases, J. A. M. A. **142**: 15-20 (Jan. 7) 1950. Naffziger, H. C., and Adams, J. E.: Role of Stellate Block in Various Intracranial Pathologic States, Arch. Surg. **61**: 286-293 (Aug.) 1950. Nosik, W. A.: Stellate Ganglion Block in Cerebro-Vascular Accidents, Ann. Int. Med. **35**: 409-416 (Aug.) 1951. Alvarez.[1b]

3. Ruben, J. E.: Results of Stellate Ganglion Block Therapy for Cerebro-Vascular Accident, J. Philadelphia Gen. Hosp. **1**: 110-115 (Oct.) 1950.

The treated cases in the 1949 series were included in a previous report [3] of 100 cases of stroke treated by stellate ganglion block. Since that time an additional 58 patients with apoplexy have been treated with stellate block. These were consecutive, referred private patients, 43 of whom had conditions of less than one month's duration, and were, therefore, considered acute. The other 15 were first seen more than one month after the ictus and were classified as chronic.

Tables 1 and 2 give data on these 58 patients. Among the 43 acute apoplectic patients, cerebral thrombosis was both the commonest and the most responsive of the causes of cerebrovascular accident. Hemorrhage is poorly represented, because patients in whom gross hemorrhage is suspected are never given immediate block. Patients with encephalomalacia respond very poorly to stellate block or any other therapy, and the results bear this out. It is extremely difficult to define "improvement" in these patients accurately except when it is dramatic. Of the 17 with thrombosis, 11 had dramatic improvement; 2 of the 4 with embolus and all with spasm had dramatic results. Of the 26 who improved in the series, 69% showed dramatic improvement following the block. We have had the discouraging experience of having as many as 10 consecutive patients show no improvement. Fortunately, this occurred only after we had had some good results. Stellate block appears effective beyond coincidence or suggestion when a patient moves a previously flaccidly paralyzed extremity within a few minutes of the appearance of Horner's syndrome.

REPORT OF CASES

CASE 1.—A 64-year-old white woman was stricken with left hemiplegia with a complete flaccid paralysis and almost complete left hemianesthesia on July 30, 1951. Right stellate block was done on August 1, and, within five minutes of the appearance of a right Horner's syndrome, she was able to perform gross movements of the left arm and leg. The following day the block was repeated, and fine movements of the left fingers were possible immediately afterwards. She was gotten out of bed. On August 3, the final block of the right stellate ganglion was done. Five minutes after this was completed, the patient could perform any desired movement of the left side of the body, and sensation was normal. She was discharged five days after admission, to resume her normal activities without further treatment.

CASE 2.—A 61-year-old hypertensive white man awoke on May 1, 1952, with paresis of the left face and arm and flaccid paralysis of the left fingers. Right stellate ganglion block was done, and immediately after the appearance of a right Horner's

syndrome motion returned to the left third, fourth, and fifth fingers, and the weakness of the left face and arm lessened. The patient improved in the next 24 hours; the right stellate block was repeated, and he could then move all fingers of the left hand. In the next 24 hours there was some regression, but repetition of the block was followed by a dramatic improvement. The block of the right stellate ganglion was repeated two more times in the next four days. After this the patient had only some clumsiness in the movements of the fingers of the left hand. This disappeared in the following week, and he was discharged without residual effects two weeks after the ictus.

TABLE 1.—*Acute Cerebrovascular Accident Treated with Stellate Block*

Diagnosis	Improved		Not Improved		Died		Total No. Patients
	No. Patients	%	No. Patients	%	No. Patients	%	
Thrombosis	17	68	5	20	3	12	25
Embolus	4	66	1	17	1	17	6
Encephalomalacia	0	0	1	17	5	83	6
Spasm	5	100	0	0	0	0	5
Hemorrhage *	0	0	1	100	0	0	1
Total	26	60.4	8	18.6	9	21	43

* Block effected more than 24 hours after hemorrhage.

CASE 3.—A 60-year-old white man with mitral stenosis and auricular fibrillation had sudden, complete right hemiplegia with total dysarthria on Nov. 5, 1952, at 10:00 p. m. A diagnosis of cerebral embolus was made, and he was admitted to the hospital the following morning. At 4:00 p. m. on November 6, he had total right flaccid paralysis, dysphagia, unintelligible dysarthria, right mass withdrawal reflex, and equivocal right Babinski reflex. The right side of the face was weak, the tongue protruded to the right, and the patient was semistuporous. Ten minutes after left stellate ganglion block, which resulted in a prompt Horner's syndrome, the patient became conscious and had gross movements of the right arm and leg. In the next 24 hours, he showed no further improvement. The block was repeated, and fine movements returned immediately to the right fingers and toes. After four more left stellate blocks in the next 16 days, the patient was able to walk with help on November 24. By November 30, he was able to walk alone in the walker and was practicing writing. On December 5, he was able to walk without a cane and could speak a few words. He was discharged from the hospital December 12. A total of nine left stellate blocks had been given during his five weeks of hospitalization. On Jan. 7, 1953, the patient was doing limited work, was able to write well enough to sign checks with his right hand, could make himself understood, and could care for his personal needs.

There are those who maintain that such results might have been obtained without stellate block. But we wish to emphasize that in these cases, and in many others, dramatic improvement was observed almost immediately after the appearance of Horner's syndrome induced by stellate ganglion block.

The use of stellate ganglion block in the patient who has had a stroke is based on the theory that there is an element of reflex cerebral vasospasm associated with the vascular insult. If this spasm is prolonged, the resulting ischemia may impair the function of a greater area of brain tissue than that affected by the vascular lesion. On this basis, stellate ganglion block is of most benefit when effected early. If the vascular injury involves a vessel so large that massive cerebral infarct occurs, stellate ganglion block will be of no value. But if it involves only a small vessel, abolition of the reflex vasospasm may preserve an area of brain tissue that might otherwise be permanently damaged. Since there is no way of distinguishing immediately after the ictus whether the vascular insult is in a large or small vessel, every patient with a stroke not caused by hemorrhage deserves a therapeutic trial with stellate block. It is our practice to effect at least three blocks at 24 hour intervals before concluding that a patient will not be benefited.

For some unknown reason, a few patients respond to block months or years after the ictus. On this basis 15 chronic hemiplegic patients have been treated with stellate ganglion block, and these results are given in table 2.

CASE 4.—A 60-year-old white man had a cerebral thrombosis in July, 1952. He was immediately hospitalized and treated conservatively (but without stellate block) for three weeks. This led to a stabilization of his general condition but no improvement of the hemiplegia. He was discharged with total right flaccid paralysis. When he was examined on September 15, there was a complete flaccid paralysis of the right arm and leg and right facial weakness, including the tongue and eyelid. His speech was markedly impaired by aphasia and dysarthria, and he complained of severe pain in the right shoulder.

After left stellate ganglion block and the appearance of a left Horner's syndrome, the pain in the right shoulder stopped, and the patient was able to move the right leg slightly. Corrective exercises were recommended, and potassium iodide was added to the ascorbic acid, rutin, and phenobarbital that he had been taking. At the end of two weeks and after five stellate ganglion blocks, he had sufficient power in the right upper and lower extremities to stand in a walker and to manipulate the device with help. One month after treatment was begun, he had added abduction and adduction of the thigh to extension of the leg on the thigh, and rotary motion of the shoulder appeared earlier. He was fitted with an ankle brace to prevent inversion of the foot and walked without aid. Two weeks later (after 12 blocks) the patient was able to flex the right arm at the elbow. Appropriate and progressive corrective exercises were prescribed and taught at each stage of improvement. Electric muscle stimulation was begun after the first month of treatment, along with indicated physical therapy. In seven weeks, he was able to walk with a cane, and one week later he was walking to the dining room for his meals. Maximum improvement from stellate block therapy

TABLE 2.—*Chronic Cerebrovascular Accident Treated with Stellate Block*

Diagnosis	Improved		Not Improved		Total No. Patients
	No. Patients	%	No. Patients	%	
Thrombosis	4	31	9	69	13
Hemorrhage	0	0	2	100	2
Total	4	27	11	73	15

was reached after 22 blocks in four months. At this time the patient was able to go up and down the steps, dress daily without help, and walk unaccompanied.

METHOD

Stellate block in this series was produced by depositing 10 to 20 cc. of local anesthetic solution on the transverse process of the sixth cervical vertebra by the anterior approach after the method described by Pereira.[4] Procaine (1%) or the equivalent concentration of similar drugs was used. The block was repeated at increasing periods of time until the patient showed no further improvement after a successful block. In six years of using this block by the method described, we have not had a single mortality or any disabling sequelae. We

4. Pereira, A., de S: Blocking of the Middle Cervical and Stellate Ganglions with Descending Infiltration Anesthesia: Technic, Accidents and Therapeutic Indications, Arch. Surg. **50**: 152-165 (March) 1945.

believe that stellate ganglion block must be combined with other treatment, including general medical support and good nursing care, in the management of the patient who has had a stroke. Encouragement of the patient to build confidence in himself and his physicians is essential. Physical medicine, with its corrective exercises, re-education, muscle stimulation, and appliances, is important. In the acute phase, any slight degree of cardiac decompensation is significant, and appropriate treatment should be started promptly.

SUMMARY AND CONCLUSIONS

Fifty-eight previously unreported cases of stroke treated to maximum benefit with stellate ganglion block in addition to usual routine management are reported. More than 60% of the persons showed some improvement immediately after the appearance of Horner's syndrome. In almost 70% of those showing improvement, the benefit was striking. Since these were all private, referred patients, their general medical, nursing, and adjunct care was probably above average. This may account for our better than average results.

Increase in muscle power and control has been observed to follow stellate ganglion block in acute cases and less frequently in chronic ones. This increase has followed the appearance of Horner's syndrome (indicating a successful block) in minutes, not hours, after the injection. On the basis of our experience and results, we believe that stellate ganglion block in experienced hands is innocuous and that, until some more definitive therapy is devised, patients suffering from stroke due to embolism, thrombosis, or spasm should not be denied the possible benefits of this therapeutic measure.

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MEPERIDINE HYDROCHLORIDE USED INTRAVENOUSLY BEFORE GASTROSCOPY

PRELIMINARY REPORT

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and
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Most patients undergoing gastroscopic examination are given a barbiturate orally and a narcotic and an antispasmodic-antisecretory drug by hypodermic injection.[1] The dosage and time of administration of these drugs vary widely. Monat,[2] in an analysis of 3,000 cases, studied the effect of morphine, meperidine, and Pantopon (contains the total alkaloids of opium as soluable hydrochlorides) in combination with atropine sulfate and pentobarbital alone as premedication. In conjunction with 2% cocaine topical anesthesia, these drugs were administered subcutaneously or intramuscularly one hour before examination. Pantopon proved most satisfactory, especially in younger persons, while pentobarbital was better in older and less tense patients. Morphine sulfate was next best to Pantopon, although it occasionally produced a severe reaction with chills, and often the patient became so drowsy that examination was not possible. He noted that, with meperidine hydrochloride given intramuscularly, the patients were euphoric, cooperative, and relaxed and that analgesia was obtained, but that, with or without atropine sulfate, it sometimes produced an excessive amount of gastric secretion. Hufford [3] used meperidine intramuscularly in doses of 75 to 100 mg. and noted a combined sedative and analgesic effect manifested by calmness, an increase in the pain threshold, less gag reflex, diminution of smooth muscle spasm, and reduced salivary secretion. Five of the 38 patients complained of dizziness, and one was slightly nauseated; these symptoms, however, disappeared within 20 to 30 minutes if the patient remained at rest. Batterman [4] noted side-effects to the intramuscular administration of meperidine in 25% of his hospitalized patients. Other observers [5] have noted the ease with which endoscopic examinations are carried out when meperidine is used intramuscularly or subcutaneously immediately before the examination.

In a large medical center in which many examinations are performed, there is often disparity in the time of drug administration and the time of examination. This leads to anxiety and uncooperativeness of the patient because the effectiveness of the premedication has worn off, as it was given so long before the examination, or so recently the effective sedation has not yet developed. Such experiences have made many aware of the need for a medicament, short of general anesthesia, that will satisfy the criteria for successful gastroscopic examination, namely, sedation, relaxation, analgesia, diminution of spasm, reduction in the gastric and salivary secretions, and cooperativeness of the patient. Toward this end, the slow intravenous administration of morphine sulfate and methadone hydrochloride has been em-

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From the Department of Medicine, Division of Gastroenterology, Jefferson Medical College and Hospital.

1. Sexton, R. L.: A Survey of the Preoperative Methods Used for Preparation in Gastroscopy, Bull. Am. Gastroscopic. Soc. **2**: 4, 1950.

2. Monat, H. A.: Observations on Premedication with Various Drugs in 3,000 Gastroscopies, Rev. Gastroenterol. **13**: 440, 1946.

3. Hufford, A. R.: Gastroscopic Preparation with Demerol Hydrochloride, Rev. Gastroenterol. **11**: 328, 1944.

4. Batterman, R. C.: Clinical Effectiveness and Safety of a New Synthetic Analgesic Drug, Demerol, Arch. Int. Med. **71**: 345 (March) 1943.

5. Cropper, C. F. S.: Premedication for Gastroscopy, Correspondence, Brit. M. J. **2**: 218, 1950. Carter, M. G., and Kyllonen, A.: Beside Bronchoscopy and Esophogoscopy: Indications and Technique, Connecticut M. J. **14**: 218, 1950. Chamberlain, D. T.: New Techniques in Endoscopy, Gastroenterology **15**: 162, 1950. Rovenstine, E. A., and Batterman, R. C.: Utility of Demerol as Substitute for the Opiates in Preanesthetic Medication, Anesthesiology **4**: 126, 1943.

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ployed.[6] Thiopental (Pentothal) sodium [7] and thiopental sodium with curare and intranasal oxygen have been used as general anesthesia; subsequently thyamylal (Surital) sodium was substituted by Atwater [8] for thiopental sodium. By this method it was noted that the anxiety and restlessness of the patient were eliminated and that the examiner was provided with a quiet and cooperative subject. Its use, however, requires the presence of a trained anesthesiologist, because the drug is given to the point of narcosis.

METHOD OF STUDY

Meperidine hydrochloride has been used to supplement general anesthesia for endotracheal intubation prior to the induction of anesthesia,[9] to overcome the bucking reaction to an endotracheal tube,[10] and, intravenously, to obtain pain relief during curare anesthesia.[11] The intravenous use of meperidine hydrochloride for gastroscopy was suggested by one of us (P. J. C.) because of previous experience in obstetrics, based on the work of Roby and Schumann [12] and the later work of Schumann.[13] We have now used it intravenously in 146 patients, the majority of whom were relaxed and cooperative during the examinations. In this group, side-effects were minimal. These patients were observed in four different hospitals, and some of the examinations were performed by trainees under the supervision of one of us (C. W. W.).

Of the 146 patients examined, 115 were inpatients and 31 were outpatients. The group included patients with cardiac, renal, hepatic, or pancreatic disease. All patients were prepared in the same manner. Examination was usually carried out in the morning while the patient was fasting. One hour before examination, 0.4 mg. of atropine sulfate was given subcutaneously, and 15 minutes and 5 minutes before examination a gargle (1.8 ml.) of 2% tetracaine (Pontocaine) hydrochloride was used. With the patient lying on the table, meperidine hydrochloride was given intravenously over a period of one to three minutes immediately prior to examination. The patient was then placed in the left oblique position and gastroscopy performed. The dosage of meperidine varied from 50 to 100 mg. and was based on weight and age; one patient received 150 mg. The drug is diluted with distilled water to a volume of 10 ml. Initially 0.5 ml. was injected and a minute allowed to pass; if the patient did not experience a reaction, the injection was continued over a two minute period. After the examination, patients remained in bed for one or two hours; after that time outpatients were permitted to leave the hospital. After several months' experience with the foregoing method we decided to discontinue the use of the atropine sulfate and the gargle and to use meperidine hydrochloride as the only premedication. The withdrawal of these adjunct medicaments did not detract in any way from successful examination, and, since it eliminated the risk of topical anesthesia and reduced the preparation to a minimum, it appeared to offer additional advantages.

RESULTS

Of the 146 patients examined, 13, or 8.9%, received 50 mg. of meperidine hydrochloride; 18, or 12.3%, 75 mg.; and 104, or 71%, 100 mg. One patient received 150 mg. Fourteen examinations, or 9.5%, were unsuccessful. Cooperation and relaxation were obtained in the majority of patients; side-reactions occurred in 22, or 15.1%, of the patients. For purposes of evaluation the patients were divided into three age groups. The youngest patient was 21 and the oldest 76 years of age.

In group 1 there were 39 patients between the ages of 20 and 40 years. One patient received 75 mg. of meperidine; the others received 100 mg. Side-reactions occurred in 5, or 12.8%, of the 39 patients. Dizziness and euphoria occurred in three patients and nausea alone in two. One patient received 0.1 gm. of pentobarbital one-half hour prior to the meperidine and was oversedated, but this did not prevent satisfactory examination. Examination was unsuccessful in three, or 7.6%, of the patients; in two, lack of success was due to uncooperativeness and in one, unallayed anxiety.

In group 2 there were 64 patients between 41 and 60 years of age (table 1). This was the largest group of the series. One patient received 150 mg. of meperidine; 2, 75 mg.; 2, 50 mg.; and 59, 100 mg. Cooperation and relaxation were obtained in nearly all of the patients. There were nine, or 14.1%, who experienced side-reactions of dizziness, euphoria, and nausea. The one patient who received 150 mg. of meperidine was cooperative but not relaxed, and the gastroscope could not be passed. Six, or 9.3%, examinations were unsuccessful; five were attributable to cardiospasm and one to perforation of the esophagus. The latter occurred in a 48-year-old white man who complained of intermittent eructations of approximately 10 days' duration. He had a history of closure of perforated duodenal ulcer and a severe unexplained anemia. Roentgen studies showed nothing abnormal, and the stool was negative to benzidine. The patient received 100 mg. of meperidine intravenously prior to gastroscopic examination and experienced no untoward reaction. The examiner had no difficulty in introducing the gastroscope, but, during the course of the examination, a 1 cm. perforation of the esophagus occurred just above the cardia of the stomach. Apparently the patient did not experience any acute pain or abnormal sensation when this occurred. The meperidine may have played an important role in the

TABLE 1.—*Results of Administration of Meperidine Hydrochloride Before Gastroscopy in Sixty-Four Patients Between Ages of Forty-One and Sixty*

Dose, Mg.	No. of Patients	Gastroscopy Successful		Patient's Condition		Side-Effects		
		Yes	No	Cooperative	Relaxed	Nausea	Dizziness	Euphoria
150	1	..	1	..	..	..	..	..
100	59	54	5	50	52	1	3	3
75	2	2	..	2	2	..	..	..
50	2	2	..	2	1	1	1	1

6. Olsen, A. M., and Pender, J. W.: Preparation of Patients for Peroral Endoscopy, J. A. M. A. **150**: 842 (Nov. 1) 1952.
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8. Atwater, J. S.: The Use of Anesthetic Agents in Gastroscopy, Gastroenterology **23**: 60, 1953.
9. Brotman, M., and Cullen, S. C.: Supplementation with Demerol During Nitrous Oxide Anesthesia, Anesthesiology **10**: 696, 1949.
10. Howland, W. S., and Papper, E. M.: Circulatory Changes During Anesthesia for Neurosurgical Operations, Anesthesiology **13**: 343, 1952.
11. Neff, W.; Mayer, E. C., and de la Luz Perales, M.: Nitrous Oxide and Oxygen Anesthesia with Curare Relaxation, California Med. **66**: 67, 1947.
12. Roby, C., and Schumann, W. R.: Demerol (S-140) and Scopolamine in Labor: A Preliminary Report, Am. J. Obst. & Gynec. **45**: 318, 1943.
13. Schumann, W. R.: Demerol (S-140) and Scopolamine in Labor: A Study of 1,000 Cases, Am. J. Obst. & Gynec. **47**: 93, 1944.

prevention of the immediate shock often described when the distal end of the esophagus is ruptured.[14] The perforation was successfully closed surgically, and following convalescence further study failed to reveal any factors predisposing the patient to this accident.

In group 3 there were 43 patients over 61 years of age (table 2). This group showed the best response to the drug; most of the patients were cooperative and relaxed. The meperidine was given in smaller dosages with satisfactory effect; 11 patients received 50 mg.; 15, 75 mg.; and 17, 100 mg. There were eight patients, or 18.6%, who had mild side-reactions of dizziness and euphoria; none had nausea. None of the patients who received a 50 mg. dose had any side-reactions. Thirty-nine of the 43 patients were examined successfully. Of the four, or 9.3%, unsuccessful examinations, three were due to some form of obstruction in the lower esophagus; in one patient, this was associated with congestive heart failure, in another with scoliosis, and in a third with a lesion in the cardia of the stomach. The fourth patient had gastric retention resulting from pyloric obstruction.

COMMENT

Heretofore our routine preparation of patients for gastroscopy consisted of an intramuscular injection of morphine sulfate, 15 mg. (0.25 grain), with atropine sulfate, 0.4 mg. (1/150 grain), given 45 to 60 minutes before examination and a gargle of 2% tetracaine given 15 minutes and again 5 minutes before introduction of the scope. Although side-reactions to this premedication were only minimal, it left much to be desired regarding adequate sedation and analgesia, particularly in the more apprehensive patients. Furthermore, since these drugs were usually given to the patient on the ward prior to his being sent to the examining room, it was often difficult to maintain uniformity in the type, amount, and time of administration of the premedication. Finally, although in our own experience no untoward reaction to topical anesthesia has occurred, serious to fatal consequences have been reported.

TABLE 2.—*Results of Administration of Meperidine Hydrochloride Before Gastroscopy in Forty-Three Patients Between Ages of Sixty-One and Seventy-Six*

Dose, Mg.	No. of Patients	Gastroscopy Successful		Patient's Condition		Side-Effects	
		Yes	No	Cooperative	Relaxed	Dizziness	Euphoria
100	17	15	2	17	16	1	5
75	15	14	1	15	14	2	3
50	11	10	1	10	9	..	..

From our experience thus far, the administration of meperidine hydrochloride for gastroscopy has been found simple, and the resulting sedation and analgesia have been superior to the results we formerly obtained with morphine and atropine. In many patients, the effect was so striking that they appeared to be in a deep sleep but remained cooperative and responded to instructions. The side-reactions of dizziness, nausea, and euphoria actually were so minimal that they can be discounted. We attributed this to the position of the patient, dilution of the drug, and rate of injection. Schumann noted that there were greater side-effects when the drug was injected rapidly and that many of the side-effects subsided when the patient assumed a prone position. Pronounced changes did not occur in blood pressure or pulse rate. Frequently patients commented on the complete sense of relaxation that was achieved so rapidly. This was particularly helpful in the tense patient who was willing to have gastroscopy performed but who asked to be "given something that would knock him out." In essence, intravenously administered meperidine hydrochloride is valuable in gastroscopy because it effectively produces adequate relaxation and analgesia, with minimal side-reactions. Because it is given immediately prior to examination, it permits the type, amount, and time of administration of premedication to be controlled completely by the examiner. Furthermore, since it can be used as the only premedication, it eliminates the risk of topical anesthesia.

14. Schindler, R.: Gastroscopy, ed. 2, Chicago, University of Chicago Press, 1950, p. 92.

SUMMARY AND CONCLUSIONS

We find the intravenous administration of meperidine satisfactory for gastroscopic examination, with or without topical anesthesia and atropine sulfate given subcutaneously. The elimination of the risk of topical anesthesia is an important advantage of this method of preparation. We also note that the optimum effect of the drug is obtained at the desired time; that the older patients are more relaxed with smaller amounts of the drug; and that side-reactions to the drug are mild and occur with equal frequency in all age groups. There were no general reactions. Patients who have a great deal of anxiety toward gastroscopy tolerate the procedure well when this drug is administered. The hazards and requirements of general anesthesia are not encountered when meperidine hydrochloride is used.

ADDENDUM

Since this paper was written, we have examined an additional 110 patients gastroscopically, with meperidine hydrochloride as premedication. Analgesia was satisfactory, and there were no untoward reactions.

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Treatment in Caisson Disease.—It was early discovered by the caisson workers themselves that the only remedy for the malady was to re-enter the high air pressure. A recompression apparatus in the form of a medical air-lock is supplied at all caisson works and in all ships engaged in deep salvage. On the appearance of any symptoms the worker is placed in the compressing room, and the pressure is run up to the level at which he has been working when it is usual for the symptoms to diminish rapidly or to disappear. After the recompression the decompression must be carried out very slowly, for the bubbles of nitrogen once formed in the tissues are not easy to get rid of, although they may be kept at a small size by the pressure. A patient apparently at the point of death with cyanosis and coma may completely recover in a few hours by recompression. When symptoms have appeared the decompression should take from five to twenty-four hours. Caisson workers and divers should wear on the lapels of their jackets a metal tablet clearly inscribed with a notice stating both their occupation and the address of their place of work. They should sleep and live close to the medical air-lock in order that they may be near aid during the first hours following decompression.—D. Hunter, M.D., Occupational Diseases with Neurological Symptoms and Signs, *The Practitioner*, July, 1953.

A CIVIL DEFENSE DIRECTOR LOOKS AT THE MEDICAL PROBLEM

J. F. More, Toledo, Ohio

If we accept the premise, as we must, that the primary objective of civil defense under disaster conditions is to save life, the effective organization of our medical resources is imperative. Technical or professional knowledge, however important and precious it may be, is not enough. It must be organized in order that it may be fully utilized. A civil defense director cannot be concerned with technical and professional details of the treatment of casualties. That is the business and the responsibility of the physicians and members of other segments of the combined medical professions. But he is, and must be, concerned with the organization of every particle of the medical resources, with which America is blessed so abundantly. In his mind, the major questions are: Is our plan as perfect as we can make it? Does it provide for the fullest possible utilization of our medical resources? Have we organized or are we organizing these resources now, the hard way, or are we accepting the easy way of planning for post-attack organization, amidst confusion, hysteria, and panic? All these can be formulated in one basic question. Will our program save the maximum number of lives in the first 10 hours, the first day, the first week, or even the first month, of the disaster? The civil defense director's question is not how but how many?

In planning for any project, two things must be known as thoroughly as possible. The first is the problem and the second the means or resources available to us for the solution of that problem. In military parlance, this is known as the estimate of the situation, and it is the basic foundation for the planning of every battle and every campaign. It is basic in the training of every staff officer. Reduced to civil defense terminology, this becomes, first, an accurate estimate of the destructive effects of the atomic bomb and, second, a true and complete picture of our rescue resources. There cannot be sound, practical planning without this knowledge.

THE ATOMIC BOMB ATTACK

From research conducted at Hiroshima and Nagasaki, reinforced with data obtained from our own test atomic bursts, we have a fairly accurate estimate of the effects of the atomic bomb. It is true that most of the available information is on the 1-X, or Hiroshima-type, bomb. But from this basic information we are able to calculate the comparative power of destruction of the 2½-X, 4-X, or 8-X bombs. The estimate as to which bomb and how many may be used on a certain city is a part of strategic planning and urban analysis program and could not be considered without lengthy explanation.

Of course, the structural effects alone can do no more than indicate the number of casualties. The determining factors are: 1. The number of persons in the area at the time of attack. Here, time is an important element. The population distribution of any city varies greatly from day to night. The downtown area of a city may contain one-quarter or more of its population during business hours and only an extremely small percentage at night. Information on population concentration of every major city is available for business hours and residential distribution. 2. The status of advance warning. This is, perhaps, the most important element in the protective functions of civil defense. There is an army axiom that the first requirement of defense against aerial attack is an adequate warning system. This applies with equal force to civil defense. 3. Shelter program. This is, perhaps, the weakest link in the entire civil defense program. Yet, in each city, there are a number of buildings that would provide acceptable shelter. Some of our largest cities have subways. And we are now beginning to have a sound family shelter program. 4. The status of public education in the principles of self-protection. 5. Geographical layout of the city. Terrain features and even the shape of the congested zones could materially influence the effects of the bomb; for example, the casualties in Nagasaki were about one-half of the number of Hiroshima, owing almost entirely to physical layout and terrain feature differences of the two cities.

Knowing these factors, once we locate ground zero, or the ground point under the center of the blast, and the size of the bomb is estimated, we can calculate the estimated number of casualties. For medical planning purposes, we should select a number of probable aiming points and calculate the number of casualties for day and night distribution of population and for various sizes of bombs. Regardless of our resources, each time we do this we find the results staggering in both the tragedy and the enormity of the task that would confront the medical profession in the event of attack.

It is significant that unless there is a daytime attack and the bomb is burst over the business district or some concentrated industrial area, the size of the city does not substantially affect the number of casualties from identical bombs. With some differences, the concentration of population in our cities does not vary with size. In other words, the residential distribution of population follows approximately the same pattern. Generally, cities with larger populations cover correspondingly larger ground areas. Medical resources, however, are rather well distributed on the basis of population. Consequently, a city of 300,000 has a far greater medical problem than one 3, 4, or 10 times its size.

We must know the number of available physicians, dentists, nurses, pharmacists, nurses' aids, laboratory technicians, first aid workers, and other medical personnel, speaking in the broadest category. The available facilities, equipment, and supplies must also be determined. In addition, it is necessary to know how much equipment and supplies can be purchased with the funds governments at all levels are willing or able to provide and how much assistance in both personnel and supplies the neighboring communities could furnish. The help that could be expected from other civil defense services, particularly fire, transportation, warden, engineering,

Director of Civil Defense, Toledo.

communication, and police must also be estimated. Information on these resources is available. It is a part of the urban analysis program.

The next step is the actual planning. Here the human factor enters. All persons do not think alike, and planning loses much of its systematic nature. It becomes also an art. So we plan differently, influenced not only by our academic training but also by practical experience in actual or related matters, and by our observations. Either theory or practical experience, or both, can be used as the basis for planning. The plan arrived at may be a slipshod, poorly mimeographed piece of administrative bulletin, or it may be a beautifully executed document. I know the painstaking care, the concentration, the research, and physical and mental energy required to produce an above-average plan, and I have experienced the jubilant fever of achievement. But a plan must be implemented, and implementation means organization.

Organization is a pre-attack and not a post-attack objective. I have heard of plans of assembling personnel after the attack in prearranged areas and then organizing them into teams. One can imagine the magnitude of confusion that would prevail even under the best imaginable conditions following an atomic attack. Is it not stretching the imagination even to consider that we could organize our professional personnel into teams or units under such conditions? The time element must also be considered. Medical assistance must be given to the seriously injured as quickly as possible.

Our medical profession has become highly specialized, yet, under disaster conditions, each physician must be able to care for the seriously injured, at least in triage operations, regardless of the type of wounds. Our medical committee believes that briefing of physicians, at least in the triage phase of operations, is necessary. This applies also to other professions. But, notwithstanding this premise, we must realize that our medical resources are so limited that alone they could not operate effectively. They must be backed by many times their numbers of trained and organized lay volunteers.

We Americans have a rather peculiar and highly valuable characteristic. We like to organize. Even if we hold a small meeting, we have it on an organized basis. And our striving for perfection and our program of mass production of almost everything have made us realize the great value of training. If we hire persons, whether to run a drill press, operate a typewriter, use the tools of any trade, or even to dig a ditch, we want those who are trained. If we believe that training and organization are necessary in the ordinary pursuits of life, can we require less in the tremendous task of saving human life?

To cite a military parallel, what would happen to a field army if the commanding general had only a relatively few highly trained officers, with the rest of his forces untrained, or if he had all the men he needed but they were not organized? If he attempted to organize them after he was attacked, the result would be chaos and panic and inexcusable slaughter.

To expect less than that if we were to meet an atomic attack without training and organization is like a fantastic dream. Our medical resources are so limited within the concept of estimated requirements in an atomic disaster that the highest type of organization, providing for the most efficient utilization possible of our professional personnel, supplemented with trained auxiliaries, is imperative if we accept the principles of our American heritage that human life is the most precious possession of our nation.

The simplest method in planning and organization is to follow established procedures. We know that our army system of evacuation is the most advanced in the world, as was well proved in World War II and again in the Korean campaign. In civil defense, however, there is no similarity of problem nor of resources.

First, the carnage of an atomic blast on a city would make even Napoleon's debacle at Waterloo or the British tragedy at Dunkirk seem like a minor catastrophe. Within the capabilities of field weapons so far used, a 10% loss in 24 hours of battle is a generous estimate. In an atomic attack on a city the casualties could run from 25 to 50% of the population, not in 24 hours but in 24 minutes or less.

In the field we have highly trained, disciplined and organized units, fully equipped to carry out battle or campaign objectives. Teamwork is developed to a high degree of perfection, and even in the confusion of battle there always is control. In civil defense there may be training and organization, but all on a volunteer basis. Discipline can come only through the highest development of volunteer leadership and service. While an army unit has a medical table of organization to care for the maximum number of estimated casualties, even our largest cities cannot hope to provide sufficient professional medical personnel for the adequate care of the number of casualties that we must envision under atomic attack. The Army also has the required equipment and supplies and facilities to meet estimated casualty requirements. In civil defense, we cannot even dream of such abundance of supplies, equipment, and facilities.

Even in World War II, now considered a long time ago, all our wounded had excellent care. We had highly trained and specialized surgical teams almost up in the front lines. Farther back we had field hospitals, then mobile evacuation hospitals and the fully equipped general or base hospitals. Aside from those, we still had the great hospitals in this country. Collection and evacuation of the wounded, always through professional medical channels, was extremely rapid, orderly, and definite. In civil defense such organization in depth is just not possible. In the field we have only one front line; in civil defense every major city could be its own front line within a few hours! There might be no place to fall back and little or no reserves to call on.

In civil defense equipment and supplies, we as a people have adopted the most parsimonious economy that we have ever applied to any part of our national structure. For four years, including the current fiscal year, Congress has appropriated less than 200 million dollars for civil defense, practically putting all the burden on the states. Some of our states have been fair in the allocation of funds, but others just "passed the buck" to the cities. Local governments do not possess the tax resources to finance civil defense on an adequate scale. This applies

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to medical equipment and supplies as well as to other components of the civil defense structure.

Another important factor to be considered is the fact that in the field the wounds are almost entirely from bullets and explosive elements, such as shells and aerial bombs. Bad as these are, they are not so bad as the tremendous number of injuries that would result from an atomic blast, of hurled structural elements goring human bodies and crushing them beneath. Atomic radiation and burns would be major problems. Spending a half hour to see the Japanese medical color films of the Hiroshima tragedy is enough to give any civil defense director an idea of the magnitude of the problems to be faced.

All these factors were considered when we initiated the Toledo Medical Plan. We knew that we had only about 500 physicians and a correspondingly low number of other professional medical personnel. We had developed our basic civil defense plan, but the medical plan came as a later development.

Our academy of medicine, even before it was requested to do so, appointed an excellent committee on civil defense. Dr. Richard Hotz was made chairman, and among the members was Dr. Roscoe H. Snyder. Under the leadership of these two veterans of the gruelling Pacific campaign, our plan of organization and operations was initiated.

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PRELIMINARY FACTORS IN PLANNING

Because of the extreme shortage of physicians, dentists, pharmacists, and nurses, it was imperative that the plan provide for the most efficient utilization of medical personnel possible. We could not afford to have doctors walking about among patients in casualty or collecting stations. The tragic picture of tens of thousands of casualties that may be thrust upon the city demanded that their care be on a mass production basis. The nature of casualties under atomic blasts demanded that all the seriously wounded who had a chance to survive be taken to points of definitive treatment as rapidly as possible. Triage, an inclusive medical term that I learned to understand and appreciate, was a professional function. This meant that, in the opinion of our medical committee, there must be physicians, dentists, nurses, and pharmacists right in the disaster area. This was a requirement the committee deemed not only practical but imperative.

We realize that medical personnel alone would be incapable of carrying out the tremendous task of evacuation. They would have to be supported by many times their number of trained and organized nonprofessional volunteers. Also, our city could not financially support a medical program, even on a matching fund basis, that would envision the expenditure of a million dollars or more. Another factor was that both personnel and equipment would have to be dispersed on as wide a scale as possible. Finally, the plan had to have city-wide acceptance, which could come only from city-wide participation.

THE GENERAL PLAN

The Toledo plan is in two phases. The first phase is the enlargement of our existing hospital staffs and facilities, as a mutual aid structure, to several times their normal bed capacities, to help in caring for the wounded of any other city in our area in case it was attacked and we escaped. This phase has been fully organized for some time. Phase 2 is the plan and organization to care for our own wounded if we were attacked. (Toledo is a critical target area. Also, it is in the orbit of Detroit, certainly one of the most desirable enemy targets in the United States. Incidentally, Ohio has more target cities than any other state.) It is in this phase that we cut a new road in the field of medical rescue organization.

Personnel.—We decided to organize medical field units, each to be composed of 1 physician, 1 dentist, 2 or more nurses, 2 nurses' aids, 1 pharmacist, and 80 trained laymen. We realized also not only the necessity of clergymen in the disaster area in administering spiritual aid to the injured but also the value of their moral leadership in the control of hysteria and panic and their need in comforting the distressed. So after a conference with our spiritual aid committee, we decided to attach two or more clergymen, one Protestant, one Catholic, and, insofar as available, one Jewish, to each team. The table of organization for the lay personnel is three deep, which is not only advisable but necessary to provide for around-the-clock operation. We could not do that with the professional persons, because there were not enough of them. So, under disaster conditions, our doctors, dentists, nurses, pharmacists, and clergymen would have to be in the field for many hours without even a hope of relief.

There was never any question about the cooperation of the medical profession, of doctors, dentists, nurses, and pharmacists. It was there, even in the beginning. Clergymen also responded to our call. So we had the professional persons for assignment to our medical field service, but we needed many thousands of lay volunteers. There we made a wise decision. This was to organize our medical field service around our school structure. We went before our council of parent-teacher associations and officials of our public and parochial schools and presented our program. Our primary request was that they provide 80 lay volunteers in the area of each school. Gordon Jeffrey, then PTA Council President; E. L. Bowsher, superintendent of public schools, and Monsignor Norbert M. Shumaker, superintendent of Catholic schools, said yes without hesitation. This was excellent. But we had another request.

Supplies.—We could not see any means of financing the medical supply program for our field operations. Again, our medical leaders had a practical idea. Why not ask the PTA or related organizations to provide triage supplies? So we did. We decided on a basic table of equipment of not less than 8 litters, 200 triangular bandages, 200 bandage pads, and 2 sets of splints for each unit. We did not even suggest that these be purchased. In fact, we asked that they be homemade, by persons from the PTA, mothers' clubs, Boy Scouts and Girl Scouts, and other organizations. This, also, was accepted. Next, we presented the project to a meeting of representatives of PTA, school principals, mothers' clubs, Boy Scouts, and Girl Scouts. Again, it was accepted. Through the schools, we distributed leaflets, with a brief explana-

tion of the project, and asked parents and others to volunteer for the medical field service. Response was excellent. Unfortunately, we were not able to follow up as effectively as needed. While a number of teams were quickly organized and trained, in other cases organization was not effected. We realized, also, that a large staff of professional and lay leaders was essential.

At that time through mimeographed, illustrated circulars we explained how triangular bandages and bandage pads could be made from old bed sheets, to be sterilized in our hospitals and then packaged and stored in unit schools, and how a few 2 by 2's, with a piece of canvas or old rug, can be converted into a litter, and pieces of boards into splints. Soon Girl Scouts and others were collecting old sheets, and Boy Scouts helped PTA male members make litters and splints, while mothers' clubs and PTA members were making bandages. Our program is not completed; however, several months ago, the city council allocated funds for an assistant director and secretary for our medical section. Our volunteer staff is rather complete, in both the professional and the lay components. We are preparing for a really effective campaign this fall, to complete the entire organization before the end of the school year.

PLAN OF OPERATIONS

Our plan of operations is simple and practical. After the all-clear signal, our medical field units would assemble at their unit schools, and pick up their supplies. Large trucks, to be used as ambulances, would be furnished automatically by the motor transportation service. In addition to the organization equipment, lay members would bring with them blankets, a radio, and some other supplies.

We have 86 schools, and the maximum available medical field units would be about 90. Even if one-third of the teams were to become casualties, we would still have 60 units. Even a cursory examination brings out the dispersal value of this plan of organization. We are placing our medical resources in the city not in 1, 10 or 20, but in 90 baskets.

Upon radio direction and under zone control, the unit physician and professional personnel and a detachment of the lay volunteers would go into the disaster area. There, the function of the teams would essentially be that of triage, but it would be under professional direction. It would be the physician who would determine who should or should not be evacuated, and he would establish prioritites. Preparation of the seriously wounded for evacuation and their actual evacuation would be under his supervision. We would not send them to so-called collecting or casualty stations for sorting or triage. This would be done in the field, eliminating one very costly, in medical personnel, and time-consuming step in the process of getting the wounded to points of definitive treatment.

Of course, we are making the fullest possible use of first aid personnel, the men and women who have been and are being trained by the Red Cross, as a supplementary organization to the medical field service. In case of attack on Toledo, every drugstore would automatically become a first aid station, manned by first aiders. An atomic attack would produce thousands of light, or walking, causalties. Our medical field units would be too busy with the seriously injured to take care of them, so they would go to the nearest drugstore, where they would be treated within the limitations of first aid. Every drugstore has at least a limited amount of first aid supplies on hand. In addition, some 50 industrial plant dispensaries, organized under Dr. Charles F. Shook, of the Owens-Illinois Glass Company, would also become first aid stations. These dispensaries already carry a considerable amount of supplies in excess of their normal requirements. Heading the first aid service, under Dr. Snyder, is Victor L. Brenneman of the American Red Cross.

Of course, we realize that in an atomic attack on our city, nearly all our regular hospitals would probably be in the disaster area and could not be used. Accordingly, through the Lucas County Civil Defense Organization, we are establishing a system of 40 emergency or improvised hospitals, on the outside perimeter of the city. We have received or ordered medical supplies valued at approximately $38,000 on a matching fund basis. This amount is not impressive, but it would carry us through the first few hours of the disaster, until we could get more. Aside from the federal depot in Zanesville, Ohio is establishing a number of its own supply bases. One of these will be near Toledo. Within a few hours of the attack, we would be receiving medical supplies from our state depot. Toledo and Lucas County have separate civil defense organizations. To equalize responsibility for the medical services, James W. Ault, county civil defense director, has been delegated the responsibility for the organization of our emergency hospitals, with Dr. Henry A. Burstein as chief of the medical staff and Paul W. Kempe, superintendent of Riverside Hospital, as chief of administration.

TEST OF OPERATIONS

Last July 1 and 3 we conducted a large-scale demonstration called "Target: Toledo" simulating an atomic attack. Through voluntary contributions of materials and labor, we erected three full-sized frame houses in the football stadium of the University of Toledo, flanked by a simulated school house and drugstore, with a large army tent to represent an industrial dispensary. As the demonstration opened, the area represented a typical city neighborhood, with men and women going back and forth and children shooting marbles and playing ball and other games. As Warning Yellow was received, the staff went to the simulated control center. Using a public address system to simulate radio broadcast, Fire Chief Arnold F. Papenhagen explained the meaning of this advance warning. Then came Warning Red, with the wailing sound of the siren sending persons for cover. Soon the ominous drone of an Air Force bomber, coming a thousand miles for this purpose, could be heard. At 9:03 p. m. it was over the area, and an Army team exploded a planted bomb outside the stadium. Almost instantly, the roofs of the three houses ignited, with flames shooting toward the sky. The ghostly flames revealed a dramatic scene. Then there was no playing, no

laughter, and but little movement. Scattered all about the area were casualties. In the drugstore, counters and cabinets were pushed aside, and a first aid station came into being. Already, wardens were assisting the lightly injured to the station, where first aiders were in action.

As the All Clear was sounded, radiological teams started monitoring the area, and, as it was declared safe, a fire engine manned by auxiliaries entered. Using water from two 3,000 gallon nylon tanks, it started to put out the fire. It was closely followed by rescue teams, which began the grim task of extricating persons from under debris. Then came the medical field teams, headed by their physicians. At this point, Dr. Hotz took over the narration, explaining each step in the triage procedure. Persons who had been made up for this purpose to represent different types of injuries were examined by the unit physicians, and triage was administered under their direction. They were evacuted on homemade litters to the school house, which now had become an emergency hospital. Powerful spotlights followed the procedure. The entire operation was orderly, notwithstanding that the several hundred participants had but one brief rehearsal. The demonstration closed with a brief address by Dr. Edward J. McCormick, president of the American Medical Association, emphasizing the importance of the medical phase of civil defense. Civil Defense officials came from all parts of the country to witness this demonstration, and each evening several thousand Toledoans were in the stadium. To us, it was a proof, as good as we could have without actual disaster operations, that our plans and organizational structure are practical and operationally sound.

COMMENT

I am enthusiastic about our medical plan and organization because I am convinced that under disaster conditions they would save the most human life possible within the limitations of our resources. Much study, deliberation, and painstaking care have gone into the preparation of the plans, in the outline of the procedure for each of the numerous personnel classifications, but the results are gratifying! We have an outstanding organization. It is being accomplished at a very small financial cost. We are doing it within our available resources, and with city-wide participation. I know that, if the tragedy of war should overtake us and we were attacked, our wounded would have the best medical care that we could provide. There would be no lost motion in the care of the injured, no haphazard methods in medical rescue operations. Every man and every woman in the service, from the medical director to the unit physician and litter-bearer on the field unit, would be a member of the team. They would function not as individuals but as units for maximum accomplishment.

The development of our plans and organization has been quite rapid, but every step has been taken with deliberate care, after intelligent reasoning. As a husband and father, it gives me great satisfaction to know that if I, or members of my family, or my relatives and friends and neighbors should suffer serious injuries, there would be physicians, dentists, nurses, and pharmacists to care for us, and even clergymen of our faith to comfort us; and, as the director of civil defense, I look into the future not only with a sense of realism but with the assurance that under disaster conditions we would save the maximum number of lives possible within the limitation of our resources. It is this which I, as director of civil defense, must expect from the medical profession. I could not expect more, and I could not accept less. Whatever we have accomplished or are accomplishing stems from the dynamic, intelligent, and conscientious volunteer leadership of professional and lay persons. Their cooperation has been of the highest type in both spirit and effectiveness.

Our objective has been and always will be the saving of human life, whether we are members of the medical profession or mere laymen. We do not need the oath of Hippocrates to accept this inviolable principle. It is a part of our heritage and of our training from the cradle to the grave. We are humanitarians, all. We also are a practical people. We know not only the moral and spiritual value but also the practical worth of human life. We know that as long as man lives and the earth gives up its treasures, he can create material things without limitation within our natural laws. But all the material things of the entire world could not create a single life!

We know, also, that, as long as the threat of atomic warfare shall hang over this foolish world, we must be ready, trained, and organized to care for the injured. In this, we have no alternative. It is our obligation and our responsibility. We must do all we can to save property, but the saving of human life comes first. This is the premise of the atomic age!

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Penetrating Wounds of the Heart.—Penetrating wounds of the heart may produce either cardiac tamponade or, when the pericardium and pleura are severely enough lacerated, intrapleural hemorrhage. Most of the latter group do not survive long enough to permit institution of treatment. Those with cardiac tamponade restrict hemorrhage but may die of cardiac compression if the tamponade is not relieved. The diagnosis should be suspected in any one who has had a penetrating injury in the region of the pericardium. Shock, neck vein distention, muffled or absent heart sounds, diminished or absent cardiac pulsations, as seen on fluoroscopy, and enlarged cardiac silhouette by x-ray confirm the diagnosis. Immediate pericardial aspiration should be performed both for relief of tamponade and as further confirmation of the diagnosis. A retrosternal approach entering the skin just to the left of the xiphoid process is the method employed for this purpose. If there is an unsatisfactory response of the blood pressure following pericardial aspiration, blood should be administered intra-arterially to maintain satisfactory coronary circulation. Ice pick injuries may be sufficiently small that spontaneous closure will occur and in such cases no treatment other than the initial aspiration is indicated. However, these cases should be carefully observed and if further tamponade occurs, operative intervention is indicated. Injuries with slip knives, scissors, and larger instruments should be operated upon immediately. . . . The survival of patients [with heart wounds] has increased dramatically within the last ten years. The general use of blood replacement and antibiotics, the understanding of the physiology of acute cardiac tamponade, plus improved anesthesia, have all led to a lower mortality rate.—P. Jordan Jr., M.D., and G. E. Wilson Jr., M.D., Surgical Treatment of Vascular Trauma, *The Surgical Clinics of North America*, Aug, 1953.

HYPOKALEMIA DUE TO PERSISTENT VOMITING DURING PREGNANCY

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Vomiting occurs in approximately 50% of all pregnancies. Vomiting of pregnancy varies in degree of severity from the so-called morning sickness, or nausea, to the pernicious, or severe, type that may end fatally. Although the majority of cases of vomiting of pregnancy fall into the mild or self-limited group, there is a small percentage of cases in which constant and persistent vomiting develop and result in loss of weight, dehydration, and ketosis. There may be, in addition to the well-known syndrome of hyperemesis gravidarum, vomiting associated with other etiological factors.

During the past several years, the importance of potassium deficiency in many clinical conditions has been reported. Studies by Darrow,[1] Randall,[2] Butler,[3] and others [4] of the fluid and electrolyte losses in many clinical conditions have led to the understanding that losses of intracellular potassium frequently occur and that these losses lead to increased morbidity and mortality. It has been demonstrated [5] that losses of gastrointestinal secretions through vomiting or diarrhea result in loss of a large amount of potassium from the body and that these losses contribute significantly to the development of hypokalemia and potassium deficiency.

In the present report, we will describe eight cases of hypokalemia developing in pregnancies complicated by persistent vomiting. We will discuss the treatment of potassium deficiency in these cases.

METHODS

Patients admitted to the obstetric service of the Cook County Hospital because of pregnancy complicated by persistent vomiting were studied for abnormalities in serum potassium concentration. Laboratory studies routinely performed included serum sodium, chloride, potassium, and carbon dioxide comfining power and blood nonprotein nitrogen and creatinine. Blood was collected, except in emergencies, in the morning under fasting conditions. The daily fluid and electrolyte therapy were based on the laboratory determinations performed the same morning, and response to treatment was followed by daily blood chemistry studies on each patient. Sodium and potassium concentrations in serum were determined on a flame photometer, with lithium as an internal standard.[6]

CLINICAL MATERIAL

Clinical and laboratory data from the eight patients are summarized in table 1. Three cases histories are presented in detail. We consider that the normal range of serum potassium is from 4.0 to 5.6 mEq. per liter.[7] All patients in this report had a serum potassium concentration below 3.4 mEq. per liter, probably indicative of an intracellular potassium deficiency. All patients had little or no oral intake of food prior to admission. After admission to the hospital, hypokalemia occurred again after the parenteral administration of fluids without potassium, while oral feedings were withheld. Vomiting was pronounced and unremittent in all patients. Weight loss ranged from 4 to 25 lb. (1.8 to 11.3 kg.).

All the patients in this series exhibited lethargy, listlessness, apathy, and mental depression. Four patients were confused, and two were disoriented. Muscular weakness was present in all patients. Shallow respirations were evident in five patients. Two patients were jaundiced and laboratory studies indicated toxic hepatitis in both cases. In these cases, the cephalin flocculation was positive and the thymol turbidity was greater than 4 mg. per 100 cc.

Institution of therapy with potassium chloride given intravenously resulted in a striking improvement in mental attitude and muscular strength. In several cases, this appeared to be a lifesaving procedure. Although four patients were in critical condition on admission to the hospital, all responded to therapy and no deaths occurred. One patient (case 3), who had toxic hepatitis, had a premature labor at six months' gestation; a nonviable fetus resulted. All other patients continued their pregnancy to term without further complications.

Three patients had an elevated blood nonprotein nitrogen level. Urine output was scanty and highly concentrated in five patients. On institution of fluid and electrolyte therapy, the output of less concentrated urine increased, and the blood nonprotein nitrogen value returned to normal.

REPORT OF CASES

CASE 1.—A 32-year-old Negro woman, gravida 1, para 0, was admitted to the obstetric service of the Cook County Hospital on Oct. 7, 1950, because of vomiting of three weeks' duration. The patient had received prenatal care in another city. Her expected date of confinement was stated to be June 2, 1951. The patient had experienced nausea and anorexia since informed of her pregnancy four weeks before admission. During the three weeks prior to admission she had been able to retain only small amounts of liquids daily. The preceding week, she had had copious amounts of vomitus five to six times a day. There had been a 25 lb. (11.3 kg.) weight loss since the beginning of the vomiting. Physical examination on admission revealed an acutely ill, dehydrated woman

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showing evidence of marked, recent weight loss. The temperature was 100 F rectally. The pulse rate was 90 and regular. The blood pressure was 132 systolic and 82 diastolic. The uterus was enlarged to the size of a six weeks' gestation.

Laboratory studies showed a hemoglobin level of 78% (12.1 gm., Evelrn colorimeter). Reaction to a Kahn test was negative. Urine contained 4+ acetone but no albumin or sugar. Microscopic examination gave normal results. Blood chemistry studies on admission disclosed a serum potassium of 3.4 mEq. per liter, with normal concentrations of serum sodium and chloride (table 2). The patient received fluids intravenously consisting of 2 liters of 0.9% sodium chloride solution and 2 liters of 5% dextrose solution on the day of admission and the following day. On Oct. 9, 1950, the patient was very lethargic, drowsy, apathetic, and at times completely disoriented. Electrocardiographic findings on that day were suggestive of hypokalemia, and the serum potassium level was found to be 2.9 mEq. per liter (table 2). We were called to see the patient at this time. Treatment with potassium chloride given intravenously was begun immediately. A gradual rise in the serum potassium was noted. The following morning apathy and lethargy had diminished. Administration of potassium intravenously was continued (table 2), and dramatic improvement on the second day of therapy coincided with an abrupt rise in serum potassium concentration. The patient continued to improve, and intravenous administration of fluids was discontinued on Oct. 13, 1950. The patient was discharged from the hospital to the prenatal clinic on Oct. 20, 1950, and continued her pregnancy to term without further complications.

CASE 2.—A 35-year-old Negro woman, gravida 2, para 1, was admitted to the hospital on Nov. 24, 1950, because of intractable vomiting of two weeks' duration. The patient had been having morning nausea and occasional vomiting since the fifth week of pregnancy. During the five weeks preceding admission, the vomiting had become more frequent, and, for the past two weeks, she had been unable to retain any solid food and only a slight amount of water daily. There was a 10 lb. (4.5 kg.) weight loss during the week and a half preceding admission. Physical examination on admission revealed an acutely ill, dehydrated patient with evidence of recent weight loss. Temperature and pulse were normal. The blood pressure was 130 systolic and 80 diastolic. The patient was very weak and showed no interest in her surroundings. Respirations were shallow and infrequent. The respiratory rate was 14 to 16 per minute. The uterus was the size of a four month gestation.

Laboratory studies showed hemoglobin level 79% (12.3 gm., Evelrn colorimeter) and leukocyte count 6,400 per cubic millimeter of which 87% were polymorphonuclear. Reaction to the Kahn test was negative. The urine contained no albumin or sugar, but the test for acetone was strongly positive. Microscopic examination gave normal results. Blood chemistry studies made on Nov. 28, 1950, showed a serum potassium concentration of 2.8 mEq. per liter (indicative of severe hypokalemia). Administration of potassium chloride intravenously in sodium chloride and dextrose solutions was started immediately. Twenty-four hours after initiation of this treatment, the serum potassium concentration was 3.3 mEq. per liter (table 3), and marked clinical improvement had occurred. On the following five days, potassium chloride was administered intravenously (table 3), and a gradual rise in serum potassium concentration resulted. On the sixth hospital day, the patient was able to retain oral feedings and intravenous administration of fluids was discontinued. The patient was discharged to the prenatal clinic on Dec. 13, 1950, and continued her pregnancy to term without further complications.

CASE 3.—A 17-year-old white girl, gravida 1, was admitted to the obstetric service of the Cook County Hospital on Aug. 19, 1950, because of lower abdominal cramps and vaginal bleeding of five hours' duration. Menstruation had not occurred since February, 1950. Prenatal care had not been received. Vomiting had occurred four to five times a day during the past two months and had become intractable during the preceding five days with inability to retain any solid or liquid food. There was a 15 lb. (6.8 kg.) weight loss during the preceding five weeks. Physical examination on admission revealed a dehydrated, very ill, icteric patient with evidence of recent weight loss. Temperature and respirations were normal. The radial pulse rate was 90 per minute. Blood pressure was 135 systolic and 115 diastolic. The uterus was enlarged to the size of a six month gestation, and fetal heart tones were 130 per minute and regular. Rectal examination disclosed two-thirds effacement and 4 cm. dilatation of the cervix; the station was +2. Strong uterine contractions occurred every five minutes.

TABLE 1.—*Clinical and Hematological Data in Eight Cases of Vomiting During Pregnancy*

Case	Age	Duration of Emesis Prior to Admission	Weight Loss, Lb.	Blood Chemistry: K, mEq./Liter*	Na, mEq./Liter*	Cl, mEq./Liter*	CO_2, Cc./100 Cc.*	Nonprotein Nitrogen, Mg./100 Cc.*	Creatinine, Mg./100 Cc.*
1	32	4 weeks; intractable 3 weeks	25	2.9	138	103	40	42	...
2	35	5 weeks	10	2.8	136	103	61	42	1.0
3	17	2 months; intractable 5 days	15	2.9	130	85	58	62	2.2
4	26	5 weeks	21	3.1	139	90	56	42	...
5	30	2 months	8	3.0	142	86	77	72	2.0
6	21	10 weeks; intractable 4 weeks	10	2.9	133	89	74	40	1.0
7	19	4 weeks	4	3.3	136	82	82	69	1.8
8	23	6 weeks	10	3.4	139	85	70	34	1.0

* Normal range: potassium, 4.0-5.6 mEq. per liter; sodium, 138-148 mEq. per liter; chloride, 100-110 mEq. per liter; carbon dioxide combining power, 50-70 cc. per 100 cc.; nonprotein nitrogen, 20-40 mg. per 100 cc.; and creatinine, 1-2 mg. per 100 cc.

Laboratory studies showed hemoglobin level of 94% (14.6 gm., Evelrn colorimeter) and 13,600 leukocytes per cubic millimeter, 89% polymorphonuclear. Reaction to the Kahn test was negative. The urine contained 1+ albumin, 4+ acetone, 4+ urobilinogen, and no bilirubin. Microscopic examination gave normal results.

Administration of barbiturates for sedation and fluids intravenously consisting of sodium chloride and dextrose solutions was begun. The following morning, a baby boy weighing 3 lb. 6.5 oz. (1,550 gm.) was delivered. The girl's blood pressure six hours post partum was 120 systolic and 75 diastolic. The patient continued to vomit copious amounts of coffee-ground material. Blood chemistry studies at this time (table 4) disclosed a severe hypochloremia and azotemia. Liver function tests were indicative of toxic hepatitis. Sodium chloride and dextrose solutions were administered intravenously in amounts

TABLE 2.—*Hematochemical Data in Patient with Vomiting of Pregnancy (Case 1)*

	Date, Oct., 1950: 7	9	10	11	12	13	15	17
Potassium, mEq./liter	3.4	2.9	3.3	4.0	4.3	4.1	4.5	4.3
Sodium, mEq./liter	145	139	138	139	142	145	142	142
CO_2 combining power, cc./100 cc.	40	61	57	55	55	60	58	52
Chloride, mEq./liter	113	103	105	105	106	109	103	102
Nonprotein nitrogen, mg./100 cc.	34	42	36	27	...	25	27	25
Creatinine, mg./100 cc.	...	...	...	...	...	...	...	...
Gm. KCl*	...	8 I.V.	12 I.V.	12 I.V.	8 I.V.	6 orally	6 orally	6 orally

* Administration of potassium chloride followed determination of the blood chemical data made earlier each day.

calculated to correct dehydration and replace gastrointestinal losses. In spite of this treatment, however, the patient rapidly became lethargic, very weak, and disoriented. Respirations were shallow. On Aug. 23, 1950, she was comatose. We were called to see the patient at this time. Further blood chemistry studies revealed a serum potassium concentration of 2.9 mEq.

TABLE 3.—*Hematochemical Data in Patient with Vomiting of Pregnancy (Case 2)*

	Date, 1950							
	Nov. 28	Nov. 29	Nov. 30	Dec. 1	Dec. 2	Dec. 4	Dec. 5	Dec. 9
Potassium, mEq./liter	2.8	3.3	3.6	3.8	4.0	4.6	4.5	4.4
Sodium, mEq./liter	136	136	139	139	...	136	138	138
Chloride, mEq./liter	103	105	105	106	...	100	100	102
CO_2 combining power, cc./100 cc.	61	57	55	55	...	52	52	54
Nonprotein nitrogen, mg./100 cc.	42	36	27	...	...	...	27	24
Creatinine, mg./100 cc.	1.0	...	...	...	...	...	...	...
Gm. KCl, I.V.	8	12	10	8	8	8	...	...

per liter (indicative of marked hypokalemia). Treatment with potassium chloride intravenously (table 4) was instituted immediately, and the patient received 8 gm. of potassium chloride during the next 10 hours. Within six hours after the administration of the first 8 gm. of potassium chloride, dramatic improvement occurred. The patient was alert, oriented, and able to sit up without aid. Treatment with potassium chloride intravenously was continued for the next two days (table 4). Continued clinical improvement was rapid as the serum potassium concentration returned to normal. On Aug. 26, 1950, the patient was able to take adequate oral feedings, and intravenous administration of fluids was discontinued. Jaundice subsided, and the patient was discharged to the postnatal clinic on Sept. 2, 1950.

TABLE 4.—*Hematochemical Data in Patient with Vomiting of Pregnancy (Case 3)*

	Date, Aug., 1950									
	20	21	23	24	25	26	27	28	29	30
Sodium, mEq./liter	...	...	133	130	133	136	135	...	138	...
Chloride, mEq./liter	85	...	104	109	102	104	109	...	100	...
CO_2 combining power, vol. %	58	...	...	42	44	48	48	...	50	...
Potassium, mEq./liter	...	...	2.9	3.3	3.8	3.9	4.3	4.2	4.2	...
Nonprotein nitrogen, mg./100 cc.	62	...	40	...	32	...	...	27	...	...
Creatinine, mg./100 cc.	2.2	...	1.0	...	...	...	...	...	...	...
Cephalin flocculation	...	3+	...	1+	...	...	1+	...	...	...
Thymol turbidity	...	3.8	...	...	4.6	...	...	...	...	...
Gamma globulin	...	1.05	...	...	9.99	...	...	...	...	...
Ieteric index	41	...	44	...	...	...	19	12	...	...
Gm. KCl	...	...	8 I.V.	8 I.V.	8 I.V.	6 orally	...	6 orally	6 orally	...

COMMENT

Pathogenesis.—One of the major factors leading to development of potassium deficiency is the limitation of potassium intake. The average normal intake of potassium is from 3 to 4 gm., or 75 to 100 mEq., per day.[8] There is no storage of potassium in the normal adult; instead, the excess intake is excreted in the urine. In malnutrition or dehydration, cellular breakdown occurs with resultant release of potassium from the cell. This potassium is excreted in the urine. An inadequate intake of potassium, malnutrition, and dehydration were present in the majority of the patients in this study.

The kidney is the principal route of potassium excretion. The usual urinary excretion of potassium is 2 to 3 gm. per day. Although the daily total excretion of potassium may be decreased, renal losses continue even during periods of marked potassium deficiency. The renal mechanisms for potassium excretion are influenced by many extrarenal factors, including disturbances in acid-base balance, infusions of parenteral solutions, and body stress. All of these factors were present in the patients in this study. Prolonged parenteral use of fluids is often necessary in patients with vomiting to provide nutrition and prevent dehydration. The solutions used contain little or no potassium; therefore, patients sustained on these solutions alone receive an inadequate intake of potassium, and the resultant diuresis causes an increased renal loss of potassium.

In addition to the loss of potassium through increased renal excretion, the patients in this study had an additional source of potassium loss through vomiting. In previous studies,[9] potassium was found to be present in gastric juice in concentrations ranging from 6.5 to 27 mEq. per liter. Others [2] have reported concentrations of 40 mEq. per liter. Normally the potassium content of these secretions is reabsorbed; however, patients with a daily loss of 2 to 3 liters of gastrointestinal fluids may lose as much as 75 to 100 mEq. of potassium per day (equivalent to the potassium content of 5.5 to 8 gm. of potassium chloride). This loss of potassium contributes significantly to the development of potassium deficit.

Clinical Manifestations.—The commonest clinical picture encountered in potassium deficiency is a symptom complex consisting of gradually increasing weakness, loss of energy, anorexia, and mental depression.[10] Shallow, infrequent respirations are frequently noted, and death may result from respiratory paralysis. Abdominal distention, caused by paralytic ileus, is often observed.

Hypochloremia alkalosis that does not respond to hydration and sodium chloride therapy is indicative of potassium deficiency and readily responds to treatment with potassium chloride solutions administered intravenously.[9] Alterations in cardiac function are common in severe potassium deficiency. Cardiac arrhythmias, the development of systolic murmurs, and cardiac dilatation are observed clinically. The electrocardiographic changes with hypokalemia have received considerable attention.[10a]

TREATMENT OF POTASSIUM DEFICIENCY

The following routine is suggested as a basis for treatment of hypokalemia. Daily blood chemistry studies, including serum sodium, potassium, chloride, and carbon

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dioxide combining power, are necessary for accurate treatment of fluid and electrolyte abnormalities. Potassium may be added to all types of fluids given intravenously and subcutaneously. Concentrations should not exceed 3 gm. of potassium chloride per liter of fluid for parenteral use and should be administered at rates not exceeding 8 to 12 cc. per minute. More concentrated solutions or faster rates of administration may lead to high serum levels of potassium that are toxic to the heart and that result in heart block and cardiac arrest. We have not encountered this complication. Potassium may be administered in the above concentrations as long as adequate urine output is present (at least 800 cc. every 24 hours) and hypokalemia exists.

Three grams of potassium chloride are added to each liter of fluid for parenteral use so that the patient will receive 9 to 15 gm. of potassium chloride (121 to 202 mEq. of potassium) a day. This treatment is continued until the serum potassium level has been normal for 24 hours; after that 6 gm. of potassium chloride are administered daily. Parenteral administration of potassium is continued until oral feedings are tolerated. Since most foods are a good source of potassium, potassium salt therapy is no longer needed after the patient can be fed an adequate diet.

SUMMARY AND CONCLUSIONS

Eight patients with vomiting during pregnancy were found to have hypokalemia on admission to the hospital. The loss of potassium through vomiting, limitation of potassium intake, and increased renal excretion of potassium were the major pathogenic factors in the development of hypokalemia in these cases. The intravenous administration of potassium chloride solutions in the treatment of hypokalemia is discussed. Treatment of potassium deficiency is an important addition to the care of pregnant patients and is often essential for their survival.

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AN OBSESSIVE-COMPULSIVE REACTION TREATED WITH PREFRONTAL PROCAINE INJECTION

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Injection of various substances into the frontal lobe of the brain has been one of the various methods utilized to treat intractable pain and certain psychiatric disorders since Moniz's original report on lobotomy in 1936.[1] He injected small amounts of alcohol in some of his early cases. Lindsay,[2] in 1950, described the injection of small amounts of procaine into the forebrain of three psychotic patients. Putnam [3] and Van Wagenen [4] have used procaine injections as a preliminary and temporary procedure in an effort to estimate in advance the possible effect of a surgical prefrontal lobotomy. Two of us (F. E. N. and F. C. G.)[5] have used multiple injections of much larger amounts of procaine for the relief of intractable pains from advanced carcinoma. This idea followed John Adams' [6] demonstration in San Francisco in 1950 that long-term changes in psychotic behavior resulted from massive frontal lobe procaine injections. More recently it has come to our attention that Bucaille,[7] in France, and Mandl,[8] in Germany, have also utilized such injections for pain since 1950.

In February, 1953, treatment utilizing Nulsen's procedure was initiated at the Pennsylvania Hospital Department for Mental and Nervous Diseases with certain selected psychiatric patients. These patients were those relatively inaccessible and lacking in response to psychotherapy. It was hoped that there would be increased accessibility and that psychotherapy could then be utilized so that the recovery process initiated by the temporary lobotomy could be enhanced and prolonged. Ten patients have been so treated. A severe obsessive-compulsive patient who was completely incapacitated showed a most abrupt and dramatic change that is reported here.

REPORT OF A CASE

A 52-year-old man was brought to the hospital by his wife on Feb. 24, 1953, because of a severe exacerbation of obsessive-compulsive reaction that had its first onset at age 19. For two months he had been obsessed with the fear that recipients of his bills would be harmed by some contamination he had gotten on them. For the month prior to admission he had made increasing demands on his wife for reassurance that he had not struck someone with his car or that he had not injured somebody by touching him. In the several days before hospitalization there was near delusional uncertainty. He became so indecisive and preoccupied that he was unable to dress or eat without physical aid and constant reassurance by his wife.

The patient was the youngest of seven siblings born into an upper middle class family. He did very well in school and was valedictorian of his high school class. He participated in such sports as baseball, tennis, and swimming. He entered a university when he was 18 years old but left in the middle of his sophomore year because after he had jumped over a tennis

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From the Pennsylvania Hospital, Department for Mental and Nervous Diseases, and the Hall Mercer Hospital, Pennsylvania Hospital Division.

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net he felt he had injured himself inside. Subsequently, the patient had an appendectomy "for his nerves." At the age of 21 he developed obsessive thoughts about dirt and glass and was hospitalized in a private sanatorium for several months. From the age of 22 to 36 he worked in the family business but was too incapacitated most of the time to make any real contribution. He had few outside interests and stayed very close to his rigid, domineering, over-protective mother. His father died when the patient was 27.

After the family business failed (when he was 36) he stayed at home with his mother. At 40 years of age he met his future wife, who was herself convalescing from a "nervous breakdown." His mother died the following year, but his wife had already assumed the mother's protective and domineering role. From age 41 to 47 he worked in a war plant as an expeditor, but he lost his job in the first postwar lay-offs. Since then he has lived on the return from his investments.

In August, 1951, he was admitted to a psychiatric hospital because of his obsessive fears and showed improvement after receiving 10 electroshock treatments. He was readmitted there in June, 1952, after a relapse, and was again treated with electroshock with 14 convulsions. He was discharged moderately improved, continued in group psychotherapy, but relapsed within four months.

On admission to Pennsylvania Hospital, the physical and neurological examinations were within normal limits, except for evidence of weight loss. Blood and urine examinations were normal. Mental examination showed the patient to be extremely slow and indecisive in his movements. He would make many false starts before accomplishing simple acts. He had some peculiar mannerisms with his mouth and tongue. Speech and thought were very slow, and no spontaneous talk was offered. He seemed very tense. His mood was one of mild depression. He expressed concern over dirt and was careful to avoid touching objects touched by other patients. He was well oriented in all spheres, memory was intact, and retention good, but concentration was very poor. Simple calculations such as serial sevens were accomplished inaccurately and very slowly, with much indecision. Symbolization was good. Insight was absent. An electroencephalogram was reported as "low voltage fast frequencies and poorly developed rhythms dominated the tracing with an occasional scattered sharp wave being noted in both hemispheres."

The patient was treated with psychotherapy for the first month, but his condition became worse. He became more withdrawn and stayed in his room because of phobias, which took the form of delusional ideas of "getting something on" the male nurses that might harm them or impregnating one of the female nurses. He lost 13 lb. (5.9 kg.) during the month.

On March 24, 1953, bilateral frontal trephinations were done without incident or change in the patient. Two days later, with the patient under local anesthesia, a total of 45 cc. of 1% procaine was injected into the white matter of the frontal lobes. In 5 cc. amounts, 20 cc. was injected into the right frontal and 25 cc. into the left frontal lobe. The injections were made in the inferior medial quadrant of the usual plane for frontal lobotomy. During the injection the patient became, at one time, resistive, his pupils dilated and his speech was jerky; at another point he became pale and his respirations were shallow. At the conclusion of the injection the patient was confused. Within 24 hours the confusion had begun to clear markedly and the patient was found to be clinically more spontaneous in speech and activity. Within 48 hours marked changes were noted. He spoke freely and spontaneously of his plans for the summer, he participated in activities on the hospital grounds, ate and slept well, and showed very little evidence of hesitancy and indecision. When questioned he stated that he had fears, but he showed no concern about them. His score on a modified Malamid rating scale, which had hit a high of 52 just prior to injection, dropped abruptly to 10.

On April 8, 10 cc. of procaine was injected through the original trephine openings into each frontal lobe because his indecision had been noted to have increased slightly the day before. He withstood the procedure well and showed no marked autonomic reactions. Thereafter the improvement was maintained. He was much more expressive and active and even verbalized angry feelings directly. He moved about the hospital, and participated actively and spontaneously in group activities. He seemed friendly and relaxed. He gained 10 lb. (4.5 kg.) in weight. Serial sevens, which had taken 15 minutes to complete prior to treatment, were accomplished accurately in 20 seconds. Selected psychological tests that had taken seven and one-half hours before treatment required only 45 minutes. An electroencephalogram made 17 days after the second injection showed occasional slow and sharp waves throughout both hemispheres, with rhythms slightly better developed than in the electroencephalogram made before treatment.

The patient pressed for discharge stating that he felt well and that there was no need for his continued hospitalization. He denied that he had been ill, and dynamic psychotherapeutic efforts were not successful. He was discharged on April 24, 1953, as much improved, to be followed as an outpatient.

He returned to his home, where he has been active in gardening and some sports such as golf. He has again taken over the management of his affairs but has shown no inclination to obtain employment, which is not necessary for him. His wife has stated that he is better than at any time she has known him. Indeed, his lack of obsessiveness has been somewhat a matter of concern for her because of her own meticulousness. He has been socially more active and interested than he has been for some years. He has continued to gain weight. In the outpatient conferences it has not been possible to work with him on a dynamic unconscious level. He treats the therapist as somebody he is passively willing to come and report to about his garden, his trip through New England, and the like. He has continued free of incapacitation from his phobia for six months.

COMMENT

This patient showed a marked improvement of his severe obsessive-compulsive reaction after the injection of 45 cc. of 1% procaine into the white matter of the frontal lobes of his brain. With the injection were attendant autonomic nervous system reactions. Clinically, too, a marked confusion was produced, but the confusion started to clear within 24 hours. There were none of the other regressive signs found in many patients subjected to surgical lobotomy; he neither wet nor soiled. He needed no period of habit training. After the confusion had cleared he was free of psychotic symptoms and back to his usual personality functioning level. Although it had been hoped that dynamic insightful psychotherapy might be utilized, the continuation of his utilization of the mechanisms of denial made only supportive psychotherapy possible in the three months since his discharge from the hospital.

Of the other nine patients treated (all schizophrenics) the response to injection has varied from "recovered" to "no change." The complications from the treatment have been few; two patients had convulsions in the immediate post-treatment period but none thereafter, three had hyperpyrexia immediately post-treatment, and one soiled and wet for a week. Several patients have remarked that they preferred this type of procedure to electroshock. In all the confusion was brief and comparable to, or less than, that after brief electroconvulsive therapy.

SUMMARY

A severely incapacitated obsessive-compulsive patient was abruptly and dramatically improved by the injection of 45 cc. of 1% procaine into the white matter of the frontal lobes of the cerebrum through cranial trephines. A total of 10 patients so treated demonstrated that this procedure is safe, with few complications and with less resultant regressive phenomena than after surgical lobotomy

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CLINICAL NOTES

INSTRUMENT FOR ENDOTRACHEAL ANESTHESIA DURING OROPHARYNGEAL SURGERY

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It has always been important to maintain an adequate airway during any general anesthetic, especially for any type of oral surgery performed under general anesthesia. With the increasing use of intravenous administration of anesthetics, it is even more vital. Attempts have been made in the past to perform operations such as tonsillectomy on adults by using endotracheal intubation, but the surgeon usually found that the tube obstructed the operating field or tended to slip out of the glottis. It is the purpose of this report to describe a new endotracheal tongue blade,* which is adaptable to either the Crowe-Davis or the McIvor mouth gag and which affords greater safety and better exposure.

DESCRIPTION

The stainless steel tongue blade is pictured in figure 1 and is constructed in three sizes to pass a no. 24 French, 28 French, and a 38 French endotracheal tube. These can be used for a small child up to an adult. The carrier tube is built into the tongue depressor in such a way that the lingual half pushes into the soft tissue of the tongue

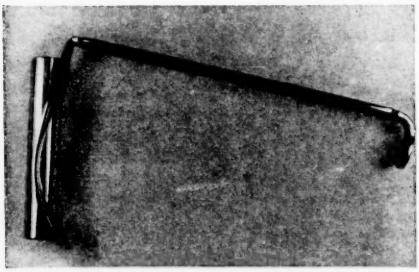

Fig. 1.—Profile of endotracheal tongue blade with carrier tube inserted in tongue depressor.

and only the oral half protrudes into the mouth. In this way there is a minimum of obstruction of the operating field.

The technique used is outlined briefly. The patient is anesthetized with whatever agent desired (cyclopropane, thiopental [Pentothal] sodium rectally or intravenously, or succinylcholine [Anectine] chloride) and an endotracheal tube inserted. Thereafter, the mouth gag, (either Crowe-Davis or McIvor) with the proper-sized blade attached, is placed in the mouth while the endotracheal tube is threaded through the tongue blade as seen in figure 2. When the gag is opened, an excellent exposure is achieved with the endotracheal tube held away from the operative field and not likely to slip out of the glottis. With the blade and endotracheal tube in place, the

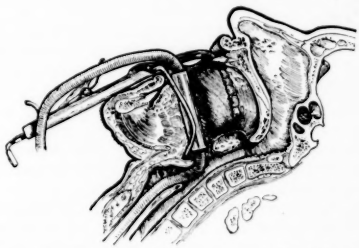

Fig. 2.—The mouth gag with the endotracheal tongue blade is introduced into the mouth while it is threaded over the endotracheal tube. Thereafter, the handle of the gag is elevated so as to elevate the posterior one-third of the tongue and the epiglottis.

McIvor gag rests on a Mayo stand, which holds the surgical instruments directly in front of the surgeon. The patient should be in the Rose position with the surgeon sitting at the head.

After the operation is completed, the tracheobronchial tree is suctioned with the catheter, and the patient is awakened by removal of the endotracheal tube. These conditions represent the anesthesiologist's "ideal."

COMMENT

The technique described by Johnson [1] has the advantage of permitting a painless operation with a pleasant induction of general anesthesia. It has not been widely accepted, however, because the endotracheal tube is not used. It is generally agreed that the Johnson technique is a dangerous one without intubation, because of possible aspiration, anoxia, and hypoxia.[2] Anesthesia is safely maintained only by an endotracheal tube. This instrument provides a satisfactory solution to the problem.

SUMMARY

The endotracheal tongue blade described has been used routinely in children and adults during the past six months. The results have been uniformly satisfactory. The advantages of the instrument described over other techniques are: (1) complete protection against laryngospasm, (2) complete protection against tracheobronchial aspiration, (3) complete protection against hypoxia, (4) pleasanter induction for general anesthesia, (5) quicker recovery of consciousness after general anesthesia, and (6) an unobstructed surgical field for all types of oropharyngeal surgery.

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* The instrument described is manufactured by the Broton-Hiltra Company, Box 11324, Briggs Station, Los Angeles 48.

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EVALUATION OF PSEUDOALBUMINURIA FOLLOWING CHOLECYSTOGRAPHY IN SEVENTY-SIX CASES

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Since 1942 iodoalphionic acid (Priodax) has been available in the United States for cholecystography. This iodine-containing preparation with the chemical name beta-(4-hydroxy-3,5-diiodophenyl)-alpha-phenylpropionic acid, is similar to the German drug Biliselectan synthesized by Dorhn and Diedrich in 1940.[1] Iodoalphionic acid contains 51.38% iodine and is usually taken orally in a dose of 3 gm. It is contraindicated in cases of acute nephritis and uremia and in acute disorders of the gastrointestinal tract.

During the past year a new cholecystographic medium called iodopanoic acid (Telepaque)[2] has been under investigation. It has proved to be of low toxicity, is effective in small doses, produces satisfactory visualization of the gallbladder, and often demonstrates the common bile duct. This preparation contains 66.68% iodine and is a brand of beta-(3-amino-2,4,6-triiodophenyl)-alpha-ethylpropionic acid. It is generally agreed that both iodoalphionic acid and iodopanoic acid are better tolerated and have definite advantages over tetraiodophenolphthalein.

Unlike tetraiodophenolphthalein, which is excreted by the colon, iodoalphionic acid and iodopanoic acid are mainly eliminated by the kidneys. Modell[3] has reported a transient albuminuria, lasting from one to seven days, in a majority of cats given large single oral doses of iodoalphionic acid. Howard[4] demonstrated that the preparation had no injurious effect on the pancreas. Both iodoalphionic acid and iodopanoic acid produce no evidence of renal or liver damage in experimental animals when used in the small amounts necessary for cholecystography. Seedorf[5] and co-workers have reported that a false positive reaction for albumin will occur in the analysis of the urine of a significant number of patients receiving the standard dose of 3 gm. of iodoalphionic acid.

In this study 76 patients were subjected to visualizations of the gallbladder with the use of a radiopaque dye, either iodoalphionic acid or iodopanoic acid. A urinalysis was made before and after cholecystography. Of the total number of tests, 40, or 52.6%, were negative for albumin on the day of cholecystography. Roberts' reagent (5 parts saturated solution of magnesium sulfate plus one part nitric acid) was used in all of these tests. There were 36 positive reactions, varying from a trace to 4 +. Fifteen patients had a 4 + reaction, 5 had a 2 + reaction and 16 showed a trace. In a recheck three days later reactions to all of these tests were negative. There was no significant difference whether iodoalphionic acid or iodopanoic acid was used in the production of the positive reaction for albumin using Roberts' reagent. Follow-up examinations in these cases failed to reveal any evidence of kidney disease.

SUMMARY AND CONCLUSIONS

The fact that it is the actual presence of iodoalphionic acid (Priodax) in the urine that causes pseudoalbuminuria has been proved by laboratory tests. Use of the heat and acid test for albumin detection in the urine will avoid this false positive reaction. Laboratories using Exton's reagent (sodium sulfate plus sulfasalicylic acid), the Heller ring test (nitric acid), or Roberts' reagent (5 parts saturated solution of magnesium sulfate plus one part nitric acid) for albuminuria detection should routinely check all positive reactions with the heat and acid test. Detectable amounts of iodoalphionic acid and iodopanoic acid (Telepaque) are present in the urine not only the morning after the ingestion of the drug but the following day and occasionally even on the third day. It is concluded that albuminuria occurring after administration of the usual dosage of iodoalphionic acid or iodopanoic acid does not indicate renal irritation due to the drug and should not be considered to be due to kidney disease.

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ACUTE ULCERATIVE COLITIS SUCCESSFULLY TREATED WITH CHLORAMPHENICOL

REPORT OF CASE DUE TO SALMONELLA PULLORUM

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The two Salmonella, gallinarum and its variant pullorum, responsible for white diarrhea of chickens, until recently have been considered nonpathogenic for man. An acute gastroenteritis, violent in onset and course, but usually self-limiting in a period of 48 to 72 hours, has been attributed to the S. pullorum.[1] From the first report of this pathogen in 1941, by Edwards and Bruner,[2] until 1950, S. pullorum had been isolated from human patients 39 times.[3] In the case reported, the infection did not follow the usual self-limiting course, and special therapeutic measures were necessary to arrest the course of the disease.

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REPORT OF A CASE

This patient was a 42-year-old white woman who was admitted to the Olney Sanitarium with the chief complaint of persistent, bloody diarrhea. Her illness had first started about five weeks prior to admission, with a severe shaking chill followed by a rise of temperature to 102 F. Other symptoms, including nausea, vomiting, cramping, abdominal pain, and marked generalized weakness, appeared in rapid succession. She was seen by her family physician and treated with aureomycin without any appreciable benefit. A barium enema, approximately one week after the onset of symptoms, showed a picture characteristic of an acute colitis. Other therapeutic measures were tried without success; in fact, the diarrhea became more pronounced, with 8 to 10 watery, spurting movements per day. During the last week prior to hospitalization, the stools became frankly bloody and she had daily elevations of temperature up to 102 F.

On reviewing the history with the patient, it was found that prior to her illness there had been an epidemic of sickness in her flock of chickens. They had seemed droopy, and several of them had diarrhea. She was quite proud of the fact that she had nursed several of the sickest chickens back to health. The fact that no one else became ill would indicate that the transmission was by direct contact rather than from ingestion of infected eggs.

The findings on routine physical examination were limited entirely to those of the abdomen and gastrointestinal tract, except for the evident weight loss and generalized marasmus. The abdomen was distended, and there was slight generalized tenderness, but no organs or masses were palpable. Anoscopic examination showed numerous pinpoint ulcerations, with active bleeding from many of these areas.

The laboratory examinations were as follows: erythrocytes, 5,050,000; hemoglobin, 109%; and leukocytes, 16,950, with 87% polymorphonuclear cells, 12% lymphocytes, and 1% eosinophils. The urinalysis was normal. Cultures of the stool showed S. pullorum as the predominating organism. There was agglutination with pullorum antigen K and the patient's serum. Antibiotic sensitivity tests showed small inhibitory zones around the disks of highest concentration of chloramphenicol (Chloromycetin) and streptomycin. Blood cultures and urine cultures were negative repeatedly.

This patient had a long period of hospitalization, which was made necessary by the resistant diarrhea and fever. During the first week, she was treated with succinylsulfathiozole (Sulfasuxidine) and chlortetracycline (aureomycin), with no change in the character or frequency of stools. There were daily spikes of temperature to 103.5 F to 104 F, with a rapid pulse and marked systemic toxicity. During the second week, she was started on chloramphenicol, 1 gm. every 24 hours; and, during this period the temperature spikes were less high and the stools diminished from 8 to 10 per day to 3 to 4 per day, but there was still gross blood present in almost every stool. The dose of chloramphenicol was then increased to 2 gm. per day, and from then until her discharge there was gradual improvement in all symptoms; however, a stool on the 20th day of hospitalization still grew out a S. pullorum on culture. A stool culture one week later failed to grow this organism.

The patient's recovery was uneventful, and there was no recurrence of symptoms. Stool cultures and serum agglutination tests one month after discharge were negative for S. pullorum.

COMMENT

S. pullorum has been reported as the etiological agent in individual cases and epidemics of an acute dysentery. In each instance, where it was possible to trace the route of transmission, infected raw or improperly cooked eggs played a role.[4] In the case presented here, transmission in all probability came from direct contact with the infected bird. This patient's flock was studied after the nature of her disease was determined, and 3 of 139 birds gave a positive agglutination for S. pullorum. Twenty-four birds had previously been culled from the flock because of diarrhea.

This case was unusual primarily because of the severity of the infection. In all previously reported cases the infection was self-limiting after three or four days, whereas this patient's disease progressed to an ulcerative phase. Sensitivity tests showed that this organism was resistant to penicillin, aureomycin, and the sulfa drugs and only sensitive to the highest concentrations of chloramphenicol and streptomycin. Prolonged therapy with chloramphenicol eventually brought about clinical and bacteriological remission.

106 N. Silver St.

4. Crowe, M.: Localized Outbreak of Salmonella Food Poisoning Apparently Transmitted by Hen's Egg, J. Hyg. **44**: 342-345 (May) 1946. Gernez-Rieux.[1] Watt, J.: Outbreak of Salmonella Infection in Man from Infected Chicken Eggs, Pub. Health Rep. **60**: 835-839 (July 20) 1945.

COUNCIL ON PHARMACY AND CHEMISTRY

REPORT TO THE COUNCIL

The Council has authorized publication of the following report.

R. T. STORMONT, M.D., *Secretary.*

CHANGES IN THE CONSISTENCIES OF COMMERCIAL CONTRACEPTIVES

Clarence J. Gamble, M.D., Milton, Mass.

MEASUREMENT OF CONSISTENCY

Mechanical obstruction to the progress of sperms, provided by contraceptive jellies and creams, is believed to be an important element in the protection from pregnancy that they provide. To give efficient obstruction, clinicians believe that the material should be sufficiently fluid to spread throughout the vagina and establish a barrier over the os uteri. It should not, however, be so liquid as to leak out of the cavity or to be too readily displaced from the os by coital or postcoital movements.

For comparisons between the consistencies of contraceptive materials, measurements have been made of their viscosities by determining the rate at which a known pressure will force them through a tube.[1] Because of their semisolid nature the results found are not constant with different diameters and pressures as they would be with liquids. The order of apparent viscosities of various materials in which these are nearly equal, therefore, may change somewhat as diameters or pressures are changed. In consequence, such measurements of semisolid materials are to a certain extent arbitrary. In the absence of more perfect indices of consistency, however, the apparent viscosity seems to be a useful one.

For the measurement of consistencies of heavy oils, use has been made of an instrument known as a mobilometer. The dimensions have been adapted by Shedlovsky [2] for convenient use with contraceptive materials (see figure). The jelly or cream is placed in a cylinder and brought to body temperature. The time is then determined that is required for a perforated disk to be pushed a standard distance through the material by the force of a known weight. While the instrument does not

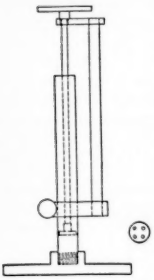
From the Department of Anatomy, Harvard Medical School.

1. Shedlovsky, L.; Belcher, D., and Bodner, H.: Consistency of Some Commercial Contraceptive Jellies, Human Fertil. **6**: 65 (June) 1941.

2. Shedlovsky, L.; Belcher, D.; Levenstein, I., and Bodner, H.: Changes on Aging in Consistency of Some Commercial Contraceptive Jellies, Human Fertil. **8**: 97 (Dec.) 1943.

determine true viscosities, it provides a convenient though somewhat arbitrary method of determining relative consistencies.

In Shedlovsky's instrument, which has been used for the measurements given, the inside diameter of the cylinder is ½ in. (1.27 cm.). The disk, mounted on a rod ⅛ in. (0.32 cm.) in diameter, is 0.485 in. (1.23 cm.) in diameter and $^{3}/_{32}$ in. (0.24 cm.) thick. It is perforated by 4 holes, each $^{1}/_{16}$ in. (0.16 cm.) in diameter. The pan at the top of the rod was loaded to give a total weight including disk and rod of 50 gm.[3] After more than 10 minutes is allowed in a waterbath at 37 C for temperature equilibrium, the time was determined that was required for the disk to fall 10 cm. through the contraceptive material from its upper surface.



Mobilometer designed by Shedlovsky, Belcher, Levenstein, and Bodner [2] for measuring consistencies of contraceptive material.

Stirring of a jelly, such as that involved in the passage through it of the mobilometer disk, usually resulted in a lower mobilometer time. For this reason only one determination was made with each filling of the instrument. The extrusion of the jelly from the tube in which it was dispensed probably lowered its mobilometer time, but this manipulation was the same as that required for its clinical use.

DESIRABLE CONSISTENCIES

No correlation has been established between the apparent viscosity as measured by the mobilometer and the effectiveness of a jelly or cream in preventing pregnancy. The difficulties of arranging such a test, the impossibility of securing materials that are equal in spermicidal activity yet differ in consistency, and above all the high cost of each failure of protection give little hope that a satisfactory test of this correlation will be arranged in the foreseeable future.

For the present we are forced to rely upon the opinions of clinicians based on a priori reasoning. For an approximate indication of these opinions, samples of contraceptive jellies and creams of known mobilometer times were submitted at 37 C to a group of 12 clinicians who had had extensive experience in the contraceptive field. They agreed that those with times of 20 seconds or less were too watery, and those with times of 5,000 seconds or more were too thick. Such a definition of the limits of desirable consistency is not completely satisfactory but appears to be the best available.[4]

CONSISTENCIES OF COMMERCIAL CONTRACEPTIVES

Shedlovsky showed that some manufacturers distribute contraceptive materials of unsatisfactory consistencies according to the definition given.[2] Of 46 brands tested in 1942, 15, or 33%, were too thick or too thin. This was also true of 25% of 51 brands which I tested in 1943, and of 14% of 22 brands secured in 1949.

To learn the recent trend, 60 brands made in the United States in 1951 were tested within a month of receipt from the manufacturer, dealer, or clinic. Eleven, or 18%, had mobilometer times of 20 seconds or less or 5,000 or more, and were therefore of unsatisfactory consistency according to the opinions of the clinicians quoted. It is hoped that the manufacturers will make this proportion smaller in the future.

The median time for the 60 brands was 116 seconds. The times of 25% of the brands were 42 seconds or less, and of the highest 25%, 235 seconds or more.

CHANGES OF CONSISTENCY WITH AGE

Early in the study of contraceptive jellies and creams, it was found that some gradually liquefied; others became unduly solid, and still others separated into liquid and solid portions. Each of these changes made them clinically unsatisfactory. For the protection of the consumer, such changes should not occur within the period elapsing between manufacture and final use.

A study of such changes was made by Brown,[5] who examined samples of 57 brands secured in 1941. He found that after 11 months at 37 C, 20 of these, or 35%, were unsatisfactory; they were either too fluid or too solid or had separated into solid and liquid portions. After 14 months at the same temperature, the number had increased to 40, or 70%. Stored at the refrigerator temperature of 8 C, 79% had good consistencies after 14 months, but such care is not to be expected in the usual pharmaceutical distribution.

Shedlovsky,[2] using his mobilometer, made a similar study of 17 brands secured in 1941 that had initial times of 24 to 750 seconds. After 12 months at room temperature, 5 of these had times of 20 seconds or less. After 4 months at 38 C, 10 (59%) were in this unsatisfactory group.

To secure information on the durability of subsequently manufactured commercial contraceptive materials, samples were tested after varying periods of storage. As in the reports of Brown [5] and Shedlovsky,[2] some of the tubes were kept at room temperatures (about 25 C) and some at 37 C. The latter temperature may be encountered on the shelves of druggists in the warmer parts of the country. Since most chemical reactions proceed more rapidly at higher temperatures, it is believed that if keeping qualities are satisfactory at 37 C, a factor of safety is indicated for the material in question under the more usual storage conditions.

Of the 51 brands secured in 1943, the proportion of 25% found unsatisfactory on receipt had increased after 12 months at room temperature to 37%, and after 24 months to 51%. Changes were more rapid at 37 C; the proportion found unsatisfactory after one and two years was 51 and 59% respectively.

More frequent determinations were made of 27 brands believed to be among those most widely distributed. Groups of 12 tubes from the same batches were secured in 1945, 1948, and 1949. The mobilometer times of 8% of these were outside the range of 20 to 5,000 seconds when received. This proportion had increased after one, two, and three years at room temperatures (average, 25 C) to 12, 18, and 30% respectively. Of the 1945 and 1948 samples, 42% were unsatisfactory after four years; of the 1943 samples, 61% were unsatisfactory after five years.

Changes were more rapid in samples kept at 37 C, some of the samples lasting less than a month. After two months, 30% were outside the satisfactory range. After one, two, and three years, the proportions were 58, 65, and 78% respectively. In the two earlier years, 82% were unsatisfactory after four years; of the 1943 samples, 83% were too thick or too thin or had separated after five years. These results show that satisfactory consistencies of contraceptive materials are possible after five years at room temperature and at 37 C. They also indicate that some materials become too thick or too thin after one or two years at room temperature and after one or more months at 37 C.

ACCELERATED AGING TESTS

Almost all of the materials were found to retain satisfactory consistencies longer at room temperatures than they did at 37 C. Most of those that became unsatisfactory at room temperature during the period of study were among the less durable at 37 C.

3. Shedlovsky [2] used a total weight of 46.5 gm. For standard measurements it seemed preferable to use the rounded weight of 50 gm., which was employed in the times herein reported.

4. To assist the reader in understanding these values, mobilometer times were determined for some familiar liquids and semisolids. These were measured at room temperature (24 C), the condition under which the reader probably has seen them. The times in seconds were: automobile lubricating oil, S.A.E. 30 (average), 1.5; S.A.E. 60 (heavy, motorcycle oil), 10; honey, 20 to 1,820; molasses, 20 to 70; Karo corn syrup, 30; Knox dessert gelatin prepared according to directions and allowed to set in the mobilometer tube, 900; set in a cup and transferred to the mobilometer, 300; a second determination after the gelatin had passed twice through the holes in the disk of the mobilometer, 60.

5. Brown, R. L.: Changes of Consistency of Contraceptive Preparations During Storage, Human Fertil. 7:161 (Dec.) 1942.

6. The median period of satisfactory consistency was about one month at 50 C (1945 and 1948) and five months at 45 C (1949). The correlation coefficient between the rank of durability at 37 C and that at the higher temperature was 0.2 in the 1945 group, 0.9 in 1948, and 0.6 in 1949.

To determine whether the rates of change in storage at 45 or 50 C would provide an index of the durability at the lower room temperatures, some of each group of 12 tubes were examined after keeping them at one of these higher temperatures. Again the durability was found to be less at the higher temperatures. Although such an abbreviation of the test period by the greater temperatures may be of value to the manufacturers in searching for durable mixtures, the correlation was not found sufficient to indicate that the results are useful to clinicians.[8]

CORRELATION BETWEEN MOBILOMETER TIMES AND PENETROMETER MEASUREMENTS

The Braun penetrometer has been used by some manufacturers to control the consistency of their contraceptive materials. This determines the distance to which a conical dart of standard design and standard weight penetrates into a semisolid material after falling a standard distance.

To determine the extent of correlation between the penetrometer and mobilometer measurements, samples of 22 brands secured in 1949 were tested by both methods. To avoid a possible effect of the stirring involved in extrusion from the container in which the material was packed, the sealed end of the tube was opened with as little disturbance of the jelly or cream as possible. After prolonged immersion in a waterbath at 37 C, the penetrometer dart was allowed to fall into the material, and the distance of penetration was determined.

The correlation between mobilometer and penetrometer measurements was negative as would be expected; in most instances a higher mobilometer time was associated with a lower penetration of the falling dart. The correlation however was slight; the correlation coefficient was –0.11.

This low correlation suggests that the two instruments measure different qualities. The most obvious difference is that the penetrometer causes a distortion of shape that is very rapid compared with that observed in the mobilometer. No evidence is available to show that the measurements of either instrument are superior to those of the other as a measure of clinically desirable qualities.

COMPOSITION OF CONTRACEPTIVE MATERIALS

It is important for progress in the contraceptive as in other medical fields that physicians should prescribe only mixtures whose compositions are known to them. If secret mixtures of the patent medicine type are used, there can be no assurance that materials ordered in the future will be the same as those found successful today. Furthermore, it will not be possible for the prescriber to improve future mixtures by choosing components that are successful and by avoiding those that prove unsatisfactory.

The Food and Drug Administration has recognized the importance of knowing the composition of contraceptive mixtures by requiring that the active ingredients be printed on the package. For contraceptive effectiveness the barrier action of the jelly-forming or cream-forming ingredients is of such importance that they are active ingredients and should be listed, along with those ingredients added for their spermicidal action.

SECRET MIXTURES

Of the 62 brands whose spermicidal times were tested in 1949,[7] 38% were secret mixtures. For 70 brands of 1951,[8] the proportion was 26%. That manufacturers may consider the unrevealed ingredients more profitable to sales is suggested by the fact that the maker of a widely advertised new material states that its formula is secret.

SUMMARY

A mobilometer provides a convenient measurement of the consistency of a contraceptive jelly or cream related to its viscosity. A group of experienced clinicians considered contraceptive jellies and creams unsatisfactory whose times by Shedlovsky's mobilometer were 20 seconds or less, or 5,000 seconds (83 minutes) or more. For 60 brands of contraceptive materials secured in 1951, the median time found was 116 seconds. Eleven of the 60 brands, or 18%, were found to have an unsatisfactory consistency on receipt. Of samples of the more widely distributed brands secured in 1945, 1948, and 1949, 18% were found to have an unsatisfactory consistency after two years at room temperature. Stored in an incubator maintained at 37 C, 58% were unsatisfactory after a year, and 62% after two years. Mobilometer times of the contraceptive materials tested were found to have no significant correlation with penetrometer measurements. Of the 70 brands secured in 1951, the formula could not be obtained from the manufacturer for 26%. Physicians using these materials of secret composition can have no assurance that future prescriptions will give the patient the same degree of protection. In contraceptive mixtures, the jelly-forming or cream-forming materials are considered active ingredients.

7. Gamble, C. J.: Spermicidal Times of Contraceptive Jellies and Creams, 1949, J. A. M. A. **148**: 50 (Jan. 5) 1952.

8. Gamble, C. J.: An Improved Test of Spermicidal Activity without Dilution or Mixing, J. A. M. A. **152**: 1037 (July 11) 1953.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

APPARATUS ACCEPTED

The following additional products have been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

RALPH E. DE FOREST, M.D., *Secretary.*

Fortiphone Hearing Aid, Model 20 A

Fortiphone Ltd., Fortiphone House, 247 Regent St., London, England, 1, W. Distributor: Anton Heilman, 75 Madison Ave., New York 16.

Fortiphone Hearing Aid, Model 20 A

The Fortiphone Hearing Aid, Model 20 A, uses three English-made vacuum tubes for amplification and is powered by a 1.5 volt Vidor A-battery and a 22.5 volt Siemax B-battery. It is capable of giving a higher acoustic gain than is the Fortiphone Hearing Aid, Model 21 C, but also has an automatic volume control, referred to as the AVC, which limits the maximum output of the instrument and prevents the intensity of sound from reaching the user's threshold of pain.

The body of the instrument measures 98 by 60 by 23 mm. and weighs 117.7 gm. The added weight of batteries, earphone, and earphone cord make a total of 180.5 gm.

The Council obtained evidence that this device was soundly constructed and performed as claimed by the manufacturer.

Fortiphone Hearing Aid, Model 21 C

Fortiphone Ltd., Fortiphone House, 247 Regent St., London, England, 1, W. Distributor: Anton Heilman, 75 Madison Ave., New York 16.

Fortiphone Hearing Aid Model 21 C

The Fortiphone Hearing Aid, Model 21 C, uses three English-made vacuum tubes for amplification and is powered by a 1.5 volt Vidor A-battery and a 22.5 volt Siemax B-battery. The body of the instrument measures 98 by 60 by 23 mm. and weighs 119 gm. With batteries, earphone, and earphone cord the total weight is 175 gm. Earphones are supplied for air and bone conduction.

Evidence of satisfactory construction and performance was obtained by the Council.

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QUESTIONNAIRE ON POSTGRADUATE EDUCATION

Postgraduate education for practicing physicians has become increasingly popular since the end of World War II. The Council on Medical Education and Hospitals has received since the war a large volume of correspondence requesting advice and information from both the producers and the consumers of postgraduate medical education. During these years it has been impossible for the Council to do more than answer superficially these numerous inquiries. The House of Delegates, therefore, authorized the Council to make a thorough study of this problem, and in April, 1952, a member was added to the staff to make such a study. The first steps were to analyze all data that were already available in the files of the Council and then to visit all the medical schools in the United States, many of the state medical societies, the state health departments, hospitals, clinics, special societies, voluntary health agencies, and a variety of other organizations engaged in postgraduate medical education. It became apparent that the material thus obtained gave only a part of the picture and that the physicians themselves who desire to undertake postgraduate courses should be canvassed for their views on the matter. Accordingly, a survey is now being made of about 18,000 doctors, utilizing for this purpose a questionnaire that was mailed from this office November 10. The questionnaire was sent to physicians in all parts of the country, and it is requested that they be filled out and returned to the Council office in A. M. A. headquarters not later than November 30.

It is expected that a comprehensive view of the whole field will result from this more balanced approach to the problem. The study is also expected to suggest recommendations for the future activities of the Council in this field. All information from the questionnaire will be treated anonymously, and no coding device will be used to identify those who answer. The cooperation of physicians in answering promptly and accurately the various questions will be greatly appreciated. The ultimate benefit should be an extension and improvement of the ways and means that physicians have found most effective in keeping up-to-date with the progress of medicine.

MILITARY REQUIREMENTS FOR PHYSICIANS

The requirements of the Department of Defense for medical officers are of interest to all those physicians who are obligated for military service. Those obligated are also interested in the approximate time they may be required to enter the military service. In view of this, the estimated requirements of the Department of Defense for physicians for the next two years are here presented.

Future requirements for physicians are directly affected by and based on the total requirements for military personnel. The estimates of future military needs for personnel are based on an assumption of the type and extent of future military operations. For the purpose of this presentation, it is assumed that the international situation with respect to employment of the armed forces of the United States will remain unchanged. Any increase or decrease of military activity as a result of the international situation will alter the military needs for physicians.

At the inception of the Korean emergency on June 25, 1950, the military physician strength of the armed forces was composed of several categories of medical officers. These were regular medical officers, including those in residency training, and reserve medical officers, including career reservists, interns, and reservists who entered military service for a short tour of duty as a result of the "moral suasion" program. Immediately after the Korean emergency, medical reserve officers were involuntarily ordered to duty to keep pace with the increase in total military personnel and operational activity. With the enactment of the "Doctor-Draft" act (Public Law 779, 81st Congress) on Sept. 9, 1950, civilian physicians became liable for military service for a maximum of 21 months, which later was extended to 24 months' service.

The total military physician strength of almost 6,200 in June, 1950, increased to approximately 13,500 in June, 1951, and has been maintained near that strength to date. As reservists were released from duty on completion of their required tour, other physicians entered the military service as replacements. To build up and maintain the required number of military physicians, a total of 17,205 physicians entered the military service during fiscal years 1951, 1952, and 1953. There is a cyclic nature to the needs of the armed forces for physicians, the greater requirements occurring in the odd-numbered fiscal years and the smaller requirements occurring in the even-numbered fiscal years. This cyclic change in yearly increments is primarily the result of the specified length of service required of medical officers brought to duty under the impetus of the "Doctor-Draft" act. Thus, the number of physicians entering active duty in the armed forces in 1951 was 7,835; in 1952 it was 3,014; in 1953 it will be 6,356; and, in 1954 and 1955, it probably will be 3,100 and 5,300 respectively.

It is understood that the total medical officer strength in the armed forces will decrease during the next 12 months to a total strength of approximately 11,500 and will remain at that level barring changes in the military

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situation. To fill this requirement, it is estimated that a total of 8,400 physicians will enter the military service during fiscal years 1954 and 1955.

During the first quarter of fiscal year 1954 (July through September, 1953) approximately 1,950 physicians entered the military service. These physicians comprise those who were commissioned as a result of induction calls during April, May, and June, 1953, certain physicians completing internship this year and who were priority 1, 2, and 3 special registrants, reserve medical officers previously deferred or otherwise obligated, and volunteers.

The military departments now have a sufficient pool of reservists to fulfill the requirement of 1,150 physicians for the remainder of fiscal year 1954. This pool of reservists is comprised of physicians who volunteered for a commission and active duty during July and August, 1953, physicians who were commissioned as the result of the August, 1953, Selective Service call, and obligated reservists who were previously deferred. Included in the requirement of 1,150 physicians are the estimates of the military departments for a portion of next years' military intern class that will be recruited from senior medical students graduating during June, 1954. Prior to July, 1954, there is little likelihood, it is reported, of any calls being placed by the Department of Defense with the Selective Service System to bring special registrant physicians into the military service.

An estimated requirement of the armed forces for physicians to enter the military service during fiscal year 1955 is 5,300. These physicians will be supplied from priority 1 and 2 reservists and special registrants who have been deferred for essentiality or hardship; priority 3 special registrant physicians who became available in July, 1953, at the completion of their internships but who will not be brought to duty during fiscal year 1954; priority 3 special registrant physicians who will complete internship during June, 1954, and become available at that time; and priority 3 special registrant physicians who will be brought to duty as volunteers and as the result of Selective Service calls.

According to the best available information, there was a total of 2,234 nonveteran medical school graduates in 1952 and 2,791 in 1953. It is estimated that 1,800 of these graduates should be available for military service as priority 3 special registrants after June, 1953, and 2,230 after June, 1954. The number of physicians completing internships during June, 1953, who will be brought to duty during fiscal year 1954 is not known at this time; however, from available evidence the large majority of this group will remain to be called to duty as a result of Selective Service calls during fiscal year 1955. It can be estimated that well over half of the requirements of the armed forces for 5,300 physicians for fiscal year 1955 will be filled with priority 3 special registrant physicians who completed internships in June of 1953 and 1954, and a relatively small number of priority 1 and 2 special registrant and reserve physicians who may become available at that time. The remainder will be supplied from the priority 3 pool of special registrant physicians.

FIRST TEACHING INSTITUTE OF ASSOCIATION OF AMERICAN MEDICAL COLLEGES

During the week of October 19 to 23, just before its 64th annual meeting, the Association of American Medical Colleges conducted its first teaching institute at Atlantic City. The area covered included physiology, biochemistry, and pharmacology. Over a year of careful preliminary planning lay behind the institute, and this was undoubtedly largely responsible for its outstanding success as a unique experience for the delegates attending from the medical schools of the United States and Canada. Initial small groups, followed by larger group discussion and eventual summarization, covered such important topics as content of courses, interrelationships between basic medical science departments and between basic medical science and clinical departments, teachers, and, finally, teaching and learning techniques.

The free interchange of ideas and the sincere discussions of the complex and perplexing problems associated with the vast increase in current knowledge in basic medical sciences did much to create better perspective on the part of all who participated. The problems associated with bridging the still too wide gap between basic knowledge in physiology, biochemistry, and pharmacology and their clinical application to the diagnosis and care of patients as well as to the advance in knowledge through research were given careful consideration.

Much concern was evident in regard to the problems that the students face in this exciting and dynamic period of medical history. Careful reevaluation of course content, with particular emphasis on analysis of the relative merits of some phases of laboratory work in the basic medical sciences, indicated widespread dissatisfaction with the content, teaching methods, and techniques of many current programs. It was obvious that there is increasing dissatisfaction with traditional methods and that a stimulating experimental ferment has become evident in many of our medical schools. The desire to experiment continuously in an effort to make teaching more effective and learning opportunities more valuable and to avoid stereotyping of undergraduate medical education was evident throughout the entire institute.

It is to be hoped that the enthusiasm for self-evaluation and critical departmental and institutional analysis will be transmitted from the institute by the delegates and deans to their institutional colleagues as they return to their respective schools. Congratulations are due to the Association of American Medical Colleges for this foresighted progressive development of what is in essence a national faculty self-analysis in connection with their annual meetings. Subsequent institutes will undoubtedly prove to be equally effective in the respective areas that they will cover.

ORGANIZATION SECTION

SIXTH ANNUAL MEDICAL PUBLIC RELATIONS CONFERENCE

Hotel Jefferson, St. Louis

Monday, November 30, 1953

PROGRAM

REGISTRATION

9:00 a. m., Gold Room Foyer

OPENING SESSION

10:00 a. m., Gold Room

Chairman: FRANKLIN L. SHIVELY JR., M.D., Dayton, Ohio, Vice-President, Montgomery County Medical Society

Address of Welcome

GEORGE F. LULL, M.D., Chicago, Secretary and General Manager, American Medical Association

Keynote Address: Facing Up to PR Facts

WALTER B. MARTIN, M.D., Norfolk, Va., President-Elect, American Medical Association

MAKING A PR PROGRAM WORK

10:30 a. m., Gold Room

How My Society Does It

JOSEPHINE RENSHAW, M.D., Washington, D. C., Chairman, Public Relations Committee, Medical Society of the District of Columbia

CLYDE W. MILLER, M.D., Wichita, Kan., Chairman, Public Relations Committee, Kansas State Medical Society

DAVID WELTON, M.D., Charlotte, N. C., President, Mecklenburg County Medical Society

LEWIS A. ALESEN, M.D., Los Angeles, Calif., Past President, California Medical Association

We'd Like to Know (Questions directed at symposium participants)

CHARLES S. NELSON, Columbus, Ohio, Executive Secretary, Ohio State Medical Association

WILLIAM ALAN RICHARDSON, Rutherford, N. J., Editor, *Medical Economics*

LEO E. BROWN, Chicago, Director of Public Relations, American Medical Association

LUNCHEON

12:30 p. m., Ivory Room

Toastmaster: EDWIN S. HAMILTON, M.D., Kankakee, Ill., Trustee, American Medical Association

What Motivates the Public's Feelings Toward Medicine

LEO H. BARTEMEIER, M.D., Detroit, Chairman, Committee on Mental Health, American Medical Association

SELLING OUR ECONOMIC SYSTEM:

HOW OTHERS DO IT

2:00 p. m., Gold Room

Chairman: E. CLAUDE BOHRER, M.D., West Plains, Mo., President, Missouri State Medical Association

HOWARD W. BENNETT, New York, Manager, Economic Education, Plant Community Relations Department, General Electric Company

ROGER FLEMING, Washington, D. C., Secretary-Treasurer, American Farm Bureau Federation

Questions and Discussion

MENDING OUR PR FENCES

3:00 p. m., Gold Room

Moderator: ROLLEN WATERSON, Oakland, Calif., Executive Secretary, Alameda-Contra Costa County Medical Association

A National View

EDWIN CROSBY, M.D., Chicago, Director, Joint Commission on Accreditation of Hospitals

Our Audit Program Works!

DURWARD BLAKEY, M.D., Clarksdale, Miss., Secretary-Treasurer, Clarksdale and Six Counties Medical Society

Mediation Committee with Teeth

DAVID W. MCCARTY, M.D., Longmont, Colo., Chairman, Board of Supervisors, Colorado State Medical Society

Tissue Committee—Watchdog for the Public

HENRY V. WEINERT, M.D., Passaic, N. J., Chairman, Tissue Committee, St. Mary's Hospital

THE YEAR AHEAD

4:45 p. m., Gold Room

What's in Store for '54

LEO E. BROWN, Chicago, Director of Public Relations, American Medical Association

5:00 p. m., Adjournment of Conference

JOINT CONFERENCE ON MENTAL HEALTH

The American Medical Association, through its Committee on Mental Health, and the American Psychiatric Association jointly sponsored a conference on mental health in Washington, D. C., Oct. 24-25. This was the first time that representatives from more than 50 lay and medical organizations interested in mental illness had an opportunity to discuss together this major problem. Discussion was centered on four major topics: the educational process in training mental health workers, research, treatment, and prevention. Welcoming addresses were given by Dr. Walter B. Martin, President-Elect of the American Medical Association, and Dr. Kenneth E. Appel, president of the American Psychiatric Association. The main objective of the sponsoring organizations was brought out by Dr. Martin when he said: "There is a growing confidence in psychiatry and a mounting conviction that its principles need to be reintroduced into all phases of medical practice, to rehumanize medicine and, in this sense, return to medicine as a healing art. . . . This occasion may well mark the remarriage of partners, who should never have been divorced in the first place."

DR. LARSON RECEIVES PATHOLOGISTS' AWARD

Dr. Leonard W. Larson, Bismarck, N. D., a member of the A. M. A. Board of Trustees, recently received from the American Society of Clinical Pathologists a special award for outstanding contributions to pathology and to the society. The award is called a Scroll of Merit, which includes a medal and a certificate. Dr. Larson was the fourth member of the society to receive this award in its 32 years of existence. He has served for many years on the executive committee and has filled every office in the society during the last 25 years.

NEW HEART EXHIBIT

The pumping action of the heart and its valves are shown graphically in a new health education exhibit now available from the A. M. A.'s Bureau of Exhibits for showings to public groups. In this heart display, the sequence of events set in motion by exercise is demonstrated to show the circulation of the blood from the body to the heart, then through the lungs returning to the heart and back through the body again. Suggestions on how to prevent heart strain as well as symptoms of heart disease also are presented. This exhibit requires an extended space 20 feet long and 4 to 6 feet in depth. If space is limited, however, it may be shown in a booth 10 feet square. State and county societies may book the exhibit through the Bureau.

MEDICAL NEWS

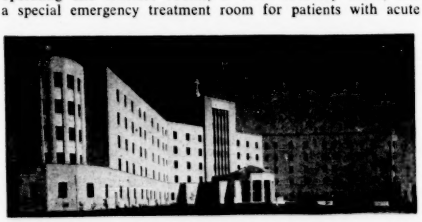
ALABAMA

Joint Meeting of Physicians and Pharmacists.—Following a joint meeting, the physicians-pharmacists relations committees of the Alabama Medical Association and the Alabama Pharmaceutical Association adopted the following recommendations:

(1) That the widespread misuse of barbiturates and narcotics is deplorable and that the associations pledge continued vigorous and wholehearted efforts further to protect the public health and aid in every way possible in stamping out these injurious practices.
(2) That continued education of both the physician and the pharmacist on the refilling of prescriptions under FDA regulations be undertaken.
(3) That no drug store name be used on prescription blanks and that the patient have freedom of choice of drug store in which the prescription should be filled.
(4) That joint meetings of physicians and pharmacists be held in every county and district to discuss mutual problems and encourage better relations.
(5) That doctors refrain from prescribing a little of every new item detailed to them and thereby help eliminate some of the druggists' problems.
(6) That druggists generally make a practice of using a nonrefill label strip on narcotic drugs.
(7) That a more uniform pricing of drugs be established.
(8) That a code of relations between physicians and pharmacists be considered and adopted for mutual progress to further protect the public health.

ARIZONA

New St. Joseph's Hospital.—On Aug. 17, St. Joseph's Hospital opened the doors of its new 6 million dollar building, which has a capacity of 325 beds, with piped-in oxygen at each bed. There are 10 operating rooms, 9 private labor rooms, and 4 delivery rooms; the emergency department consists of 3 operating and fracture rooms, a 4-bed recovery room, and a special emergency treatment room for patients with acute



New St. Joseph's Hospital in Phoenix

asthma. The outpatient department occupies one full wing of the building. A complete department of physical medicine and vocational rehabilitation is under the direction of a full time board-approved psychiatrist. St. Joseph's Hospital maintains an approved school of nursing and approved schools of medical technology and x-ray technology. With the opening of the new building, the old 198-bed St. Joseph's Hospital was closed.

CALIFORNIA

Clinic for Hard-of-Hearing Children.—A diagnostic clinic for deaf and hard-of-hearing children has been opened at Childrens Hospital in Los Angeles. The new clinic will deal primarily with the total problem of the deaf child from the standpoint of medical care, possible corrective surgery, the communication problem, and psychological evaluation. Dr. Victor Goodhill is medical director of the clinic, which is located in a sound-treated suite in the Michael J. Connell Clinic building at Sunset Blvd. and Vermont Ave.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

Personal.—Dr. Karl M. Bowman, professor of psychiatry, University of California Medical School, San Francisco, was recently awarded the honorary degree of doctor of science by Washburn University, Topeka, Kan.——Dr. Frederic J. Gaspard, who has practiced medicine in Los Angeles for more than 30 years, has been appointed as a member of the Los Angeles City Health Commission to succeed Dr. Francisco Bravo.——Dr. William M. Heidenreich was honored by his community in Arcadia when he retired from many years of service on the local board of education. After a testimonial dinner at the high school, a plaque was unveiled in the school's little theatre, which was dedicated as William M. Heidenreich Hall.——Dr. Robert Wartenberg, clinical professor of neurology, University of California Medical School, San Francisco, has been appointed honorary professor at the University of Freiburg, Germany, where he was a member of the faculty until 1935.——Dr. Bruce W. Halstead of the College of Medical Evangelists in Loma Linda has been invited to review the present status of fish poisoning in the Pacific for the eighth Pacific Science Congress, which will be held Nov. 16-28 at the University of the Philippines in Quezon City.

ILLINOIS

University Toxicology Service.—The University of Illinois College of Medicine, Chicago, reports that a total of 631 cases was handled during the 1952-1953 fiscal year by the division of toxicology of the department of pharmacology, with 491 cases handled for the coroner of Cook County. The university maintains a toxicological analytic service for law-enforcing agencies, physicians, and hospitals of the state. The service is available only to state's attorneys, hospitals, and physicians in Illinois. Services performed include blood alcohol, barbiturate, heavy metals, carbon monoxide poisoning, and alkaloidal analysis and a complete analysis if the cause of death is unknown. A nominal fee is charged for these services.

Dr. Vonachen Honored.—A citation for outstanding service in promoting the employment of physically handicapped persons was bestowed on Dr. Harold A. Vonachen, medical director of Caterpillar Tractor Company, Peoria, at a dinner sponsored by the Governor's Committee for Employment of the Physically Handicapped and the Disabled American Veterans at the LaSalle Hotel, Chicago, Oct. 4. The citation honors Dr. Vonachen for his work in pioneering the "Peoria Plan for Human Rehabilitation," which, first launched in 1942, established a national pattern, with other cities and towns throughout the country sending medical, industrial, and civic representatives to Peoria to study means of applying the program to their own communities. Representatives also came from England, Canada, Czechoslovakia, and Belgium. An outgrowth of the Peoria plan, the Institute of Physical Medicine and Rehabilitation of Peoria, a nonsectarian organization of which Dr. Vonachen is president, was established in 1951. Dr. Vonachen was presented with the William S. Knudsen award (1943-1944) for "outstanding work in the development of a program for the employment of handicapped Caterpillar workers which laid the foundation for a community-wide human rehabilitation program called 'The Peoria Plan for Human Rehabilitation.'" The Disabled American Veterans also honored Dr. Vonachen with a certificate of merit.

Chicago

Society News.—The Chicago Medical Society announces a dinner at 6:30 p. m., Nov. 17, at the Sheraton Hotel, 505 N. Michigan Ave., in honor of Dr. Joe V. Meigs, clinical professor, department of gynecology, Harvard Medical School, Boston, and Dr. Alan F. Guttmacher, clinical professor, obstetrics and gynecology, Columbia University College of

Physicians and Surgeons, New York, who will be guest speakers at the joint meeting of the Chicago Medical Society and the postgraduate course in obstetrics and gynecology. At 8 p. m. Dr. Meigs will discuss "Fibromas of the Ovaries, the So-Called Meigs' Syndrome." Dr. Guttmacher will present "Conception Control: Modern Methods and Future Possibilities."

Board of Health Examinations.—The Chicago Civil Service Commission announces examinations for the following positions in the Chicago Board of Health: (1) chief medical officer ($10,000); (2) chief of division of laboratories ($10,000); (3) chief statistician ($10,000); (4) director in charge of drugs and biologics ($7,200); (5) chief of dental health section ($6,150); (6) bureau chief of communicable diseases ($6,120); and (7) chief bureau of child welfare ($6,120). Incumbents must reside in Chicago and be eligible to apply for any appropriate Illinois license. Application forms must be on file by Dec. 1, 4:30 p. m. Examinations will be held Dec. 5. For information, write or call Civil Service Commission, Room 208, City Hall, 121 N. LaSalle St.; RAndolph 6-8000, Ext. 582.

Panel on Hypertensive Cardiovascular Disease.—Dr. George E. Wakerlin will serve as moderator for a panel on hypertensive cardiovascular disease at a meeting of the Scientific Section of the Chicago Heart Association in Albert Dickinson Hall, Chicago Academy of Sciences, 2001 N. Clark St., Nov. 17, 8 p. m. His paper, "Pathogenesis of Hypertension," will be followed with "Treatment of Hypertension from a Surgeon's Viewpoint" by Dr. Loyal Davis and "Treatment of Hypertension from an Internist's Viewpoint" by Dr. Theodore N. Pullman. Dr. Louis N. Katz, who will open the discussion with "The Natural History of Untreated Hypertension," and Dr. William A. Thomas will serve as panel members. All professional members of the Chicago Heart Association are invited. Incoming telephone calls will be received at LIncoln 9-0606.

IOWA

Institute on Heart Diseases.—An institute on heart diseases under the joint sponsorship of the state department of health and the department of pediatrics and internal medicine, State University of Iowa College of Medicine, will be held at University Hospitals, Iowa City, Nov. 19, 1:30-9:30 p. m. The following program will be presented:

Lewis Thomas, Minneapolis, Research on the Pathogenesis of Rheumatic Fever.
Charles D. May, Iowa City, Rheumatoid Arthritis in Children.
Richard V. Ebert, Chicago, Physiology of the Circulation in Acute Infections.
William B. Bean, Iowa City, Clinical Problems in Aortic Stenosis.

The institute is open to all physicians. Opportunity will be given for inspection of the cardiovascular laboratory at the university.

MASSACHUSETTS

Chandler Ford Fund.—A fund of $40,000 has been established at the Boston University School of Medicine, to be known as the Chandler Ford Fund, for research in connection with diseases of the ear and the cure of deafness. The department of otolaryngology will make use of this fund according to the wishes of the late Mr. Chandler Ford, who made this bequest.

Society News.—The fall meeting of the Massachusetts Society of Examining Physicians will be held at the Harvard Club, Boston, Nov. 18, 6:30 p. m. After the dinner Dr. Paul R. Hawley, Chicago, director, American College of Surgeons, will speak on the subject, "Some Problems as They Affect the Profession, the Individual Doctor, and the Public." All physicians are cordially invited.

NEW JERSEY

Medical Alumni Day.—The sixth annual alumni-day meeting of the Jersey City Medical Center Alumni Association, Nov. 20, will open at 9:30 a. m. with a symposium on chronic infections, which will include the following presentations by Jersey City physicians:

Diagnosis and Management of Pyelonephritis, (Urology), Jacob D. Katz.
Chemotherapy of Pulmonary Tuberculosis, Samuel Cohen.
Subacute Bacterial Endocarditis, Bernard Eisenstein.
The Problem of Viral Hepatitis, Angelo M. Gnassi and Carroll M. Leevy.

Memorial Day ceremonies will be held from 11:45 a. m. to 12:45 p. m., when the memorial lecture, "Diagnosis of Head and Neck Cancer in Children," will be delivered. From 3 to 4:30 p. m. surgery in infections will be discussed:

Experience with Generalized Peritonitis, Irving Marshall, Jersey City.
Current Concepts of Osteomyelitis, Leo E. Fischer, Jersey City.
Use of Varidase in Management of Surgical Infections, Manly B. Donaldson, New York.
The Problem of Infected Abortions, Victor Wagner, Jersey City.

NEW YORK

Society News.—"Respiratory Allergy in Infancy and Childhood" will be presented by Dr. Lewis Webb Hill, associate professor of pediatrics, Harvard Medical School, Boston, and will be discussed by Dr. Bret Ratner, professor of clinical pediatrics (allergy), New York Medical College, at a meeting of the section on allergy, Medical Society of the County of Kings and Academy of Medicine of Brooklyn (1313 Bedford Ave., Brooklyn 16) on Nov. 19, 9 p. m.

Meeting on Arthritis.—A postgraduate teaching day on arthritis and rheumatism was conducted at the Rochester Academy of Medicine, 1441 East Avenue, Rochester, Nov. 12, under the sponsorship of the arthritis and rheumatism committee of the Health Association of Rochester and Monroe County. Dr. Charles L. Steinberg, Rochester, served as chairman for the following program:

Differential Diagnosis of Rheumatoid Arthritis, Charles A. Ragan, New York.
Present-Day Treatment of Chronic Arthritis, Joseph Lee Hollander, Philadelphia.
Vascular Lesions in Rheumatoid Arthritis, Joseph J. Bunim, Bethesda, Md.

New York City

Harvey Lecture.—Dr. David Nachmansohn, Columbia University College of Physicians and Surgeons, will deliver the third Harvey lecture, "Metabolism and Function of the Nerve Cell," of the 1953-1954 series at the New York Academy of Medicine, Nov. 19.

Tumor Clinic.—Dr. Gray H. Twombly, professor of gynecology, New York University College of Medicine, will present "A Clinical Evaluation of Different Methods of Treatment of Cancer of the Cervix" at the tumor clinic conference at Harlem Hospital (Women's Pavilion, Main Floor, 137th St. Entrance), Nov. 18, 10:45 a. m.

The Salmon Lectures.—The final lecture of the 21st series of the Thomas William Salmon lectures on cultural and mental disorders will be "Culture and Hysteria" by Ralph Linton, Ph.D., Sterling Professor of Anthropology, Yale University, New Haven, Conn., Nov. 17, 8:30 p. m., at Hosack Hall, New York Academy of Medicine, 2 E. 103rd St.

OHIO

Industrial Medicine Program.—A symposium, "Dangers of Solvent Handling," will be presented before the section on industrial medicine and hygiene of the annual Greater Cincinnati Safety Conference, Nov. 17. The speakers include Floyd A. Van Atta, Ph.D., director of industrial hygiene, National Safety Council, Chicago, whose topic is "Toxicity of Solvents"; Dr. Edward A. Gall, professor of pathology, University of Cincinnati College of Medicine, who will discuss "The Effects of Solvent Absorption on the Human Body"; and Dr. Donald J. Birmingham, division of occupational health, U. S. Public Health Service, Washington, D. C., who will present "The Effects of Solvents on Human Skin." A panel discussion and question period on safe handling of solvents will complete the program. Co-chairmen for the section meeting in Parlor H, Hotel Sheraton-Gibson, 2:15

to 4:15 p. m., are Dr. James P. Hughes, Bureau of Industrial Health of the Cincinnati Health Department, and Miss Margaret Carnine, R.N., Trailmobile, Inc. Members of the medical and nursing professions are cordially invited to attend the conference and to participate in the discussion period at the meeting of the section on industrial medicine and hygiene.

PENNSYLVANIA

Mellon Lecture.—Dr. Paul Gyorgy, chief of service, department of pediatrics, Hospital of the University of Pennsylvania, Philadelphia, will deliver the 37th Mellon lecture, "Some Aspects of Protein Nutrition," before the Society for Biological Research of the University of Pittsburgh School of Medicine, Nov. 20.

WASHINGTON

Course on Advances in Drug Therapy.—A course on recent advances in drug therapy will be given in the Health Sciences Building, University of Washington School of Medicine, Seattle, Nov. 20-21, under the sponsorship of the university, the Washington State Medical Association, and the Washington State Department of Health. Friday will be devoted to discussions of metabolic disorders, infectious diseases, gastrointestinal diseases, and hematology, and Saturday to diseases of the nervous system and cardiovascular diseases.

PHILIPPINE ISLANDS

Pacific Science Congress.—The eighth Pacific Science Congress of the Pacific Science Association will convene at the University of the Philippines, Quezon City, Nov. 16-28, under the auspices of the Republic of the Philippines and the National Research Council of the Philippines. The section on public health will present (1) progress reports and panel discussions on specific public health problems, including malaria, schistosomiasis japonica, Bancroftian filariasis, yaws, and other diseases important to Pacific areas; and (2) progress reports and seminars on rural health and sanitation, including recruitment and training of personnel. The section on nutrition will discuss the place of nutrition education in the public health program; high protein substitutes for milk in child feeding; urinary excretion of thiamine and riboflavin of Filipinos; and the relationship between dietary intake and serum levels of vitamin A and carotene.

GENERAL

Fellowship in Pediatric Neurology.—One year's fellowship in pediatric neurology is now available in the Julian D. Levinson research foundation in conjunction with the children's division of the Cook County Hospital, Chicago; salary $3,500. For details communicate with Dr. Abraham Levinson, Children's Division, Cook County Hospital, Chicago 12.

Annual Cerebral Palsy Meeting.—United Cerebral Palsy has scheduled its fourth annual convention for Nov. 13-15 at the Hotel New Yorker in New York. Physicians who will deliver addresses include: Bronson Crothers and Sidney Farber, Boston; Samuel M. Wishik, Pittsburgh; Charles F. McKhann, Philadelphia; H. Houston Merritt, New York; and Glidden L. Brooks, Pittsburgh, UCP medical director.

Meeting on Electronic Instrumentation.—The annual conference on electronic instrumentation and nucleonics in medicine will be held at the New Yorker Hotel in New York, Nov. 19-20, under the sponsorship of the American Institute of Electrical Engineers, Institute of Radio Engineers, and the Instrument Society of America. Recent advances in instrumentation for x-ray motion pictures, the use of ultrasonic waves in the visualization of soft tissue structures and cancer, analytical methods in blood serum determinations, and other papers on medical instrumentation will be presented.

Industrial Hygienists Meet in Pittsburgh.—The 18th annual meeting of the Industrial Hygiene Foundation will be held at the Mellon Institute, Pittsburgh, Nov. 18-19. Dr. Oscar A. Sander, Milwaukee, chairman, medical committee, will be chairman of a conference on trends in industrial medicine Wednesday morning. The program will open with the presentation, "The Proper Scope of Medical Care in Industry," by Dr. Carl M. Peterson, Secretary, A. M. A. Council on Industrial Health, and discussion by Dr. Joseph H. Chivers, Chicago. Other papers will be presented as follows:

The Stress Disorders, William P. Shepard, New York; discussion, Dr. Samuel T. Nicholson Jr., Pottstown, Pa.

Problems Associated with Older Workers, Charles E. Dutchess, New York; discussion, Edward M. Kline, Cleveland.

Compensation for Residual Disability, Clarence D. Selby, Ann Arbor, Mich.; discussion, Edward H. Carleton, East Chicago, Ind.

Dr. Sander will also serve as chairman for the joint medical-legal conference Wednesday afternoon, and he and Dr. James P. Hughes, Cincinnati, will participate in a panel discussion, "Administration of Workmen's Compensation Laws."

New England Diabetes Fair.—The diabetes fair, sponsored by the New England Diabetes Association, will be held Nov. 16-17 during National Diabetes Week, at Horticultural Hall, Boston, from 11 a. m. to 10 p. m. The committee consists of Dr. Harry Blotner, Boston, chairman, and Drs. Frank N. Allan, Boston, Charles W. Finnerty, Somerville, Mass., and Alexander Marble and Howard F. Root, Boston, and the association officers, Dr. Richard P. Stetson, Boston, president; Dr. Reed Harwood, Boston, vice-president; Dr. Lewis Tillman McDaniel, Brookline, Mass., treasurer; and Dr. Charles C. Bailey, Boston, secretary. To stimulate the interest of the public concerning diabetes, there will be exhibits illustrating various phases of diabetes and its management: pharmaceuticals, dietetics, social and public service aids, diabetes camps, insurance for diabetics, diabetes detection in certain communities, nursing care in the hospital and home, books and pamphlets on diabetes, and charts illustrating medical and surgical features of diabetes. Motion pictures will be presented throughout the day. Lecture programs in the afternoon and evening of both days will feature panel discussions on diabetes. X-rays of the chest will be available, and facilities will be provided for urine sugar and blood sugar testing to be made while the subjects watch the procedure. Physicians, medical students, nurses, social workers, the public at large, and other interested groups are invited to attend the fair.

LATIN AMERICA

Centennial in São Paulo.—For the fourth centennial of its founding, the city of São Paulo, capital of the state of São Paulo, Brazil, is planning a series of cultural events that will include meetings of medical interest. Scheduled for April, 1954, is the International Congress of Surgery of the International College of Surgeons; for July, the International Cancer Congress, International Cardiological Congress, International Congress on Oto-Neuro-Ophthalmology, Pan American congresses of gastroenterology and on puericulture and pediatrics, South American Congress of Angiology, which will deal with the etiopathogenesis, medical and surgical treatment of arteriosclerosis obliterans, and Latin American congresses on gynecology and obstetrics and on mental health; for November, the 10th International Congress on Medicinal and Similar Plants. Information may be obtained from the secretary, Associação Paulista de Medicina, Caixa Postal 2103, São Paulo, Brazil, or from the Committee on the Fourth Centennial of the City of São Paulo, Rua 24 de Maio, 250–7° andar, São Paulo, Brazil, S. A.

FOREIGN

London Medical Exhibition.—An annual medical exhibition will be held at the New Horticultural Hall, Greycoat St., Westminster, Nov. 16-20, for display of the latest developments in pharmaceutical research, ethical medical products, surgical instruments, hospital equipment, etc. Members of the public are not admitted, but a special welcome is extended to members of the medical profession in America and other overseas countries. Information may be obtained from the organizers, The British & Colonial Druggists Ltd., 194-200, Bishopsgate, London, E.C.2., England.

DEATHS IN OTHER COUNTRIES

Dr. René Sand, an honorary member of the American Medical Association, died Aug. 23 in Brussels, Belgium, at the age of 76. Dr. Sand, who was the founder of the Belgium Social Medicine Association in 1912, founded the International Hospitals Association in 1929 and was its first president, and served also as president of its postwar successor, the International Hospital Federation, from its foundation in 1947 to his death. He was technical adviser to the League of Red Cross Societies from 1921 to 1936 and secretary-general of the Belgium Ministry of Health from 1937 to 1940, when he was captured by the Nazis and imprisoned in Tyrol, Austria, where in 1945 he was liberated by the U. S. Seventh Army. Dr. Sand presided over a committee of experts assembled by the UN in Paris in 1946 to draft an international health organization, and in 1950 he was appointed chairman of the World Health Organization expert committee on professional and technical education. He recently served as chairman of the 8th International Hospital Congress in London. After World War II Dr. Sand was the first occupant of a chair of social medicine established in the University of Brussels with the support of the Rockefeller Foundation. He founded the Belgium Committee on Social Work and the International Conference on Social Work and was recently elected the first president of the Societé Belge de Droit International Médical, which is dedicated to the study and development of international medical law. An honorary member of the American Hospitals Association and the New York Academy of Medicine, Dr. Sand was awarded the Leon Bernard Foundation prize in 1951. He was to have been one of the vice-presidents of the First World Conference on Medical Education held recently in London, but illness prevented his attendance. News of his death reached London while the conference was in progress.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 22-24, 1954. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery.

COLORADO:* *Examination.* Denver, Dec. 15-16. Final date for filing application is Nov. 14. Executive Secretary, Miss Beulah H. Hudgens, 831 Republic Bldg., Denver 2.

DELAWARE: Dover, Jan. 12-14, 1954. Sec., Dr. Joseph S. McDaniel, 229 South State St., Dover.

FLORIDA:* *Examination.* Jacksonville, Nov. 22-24. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami 36.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Director of Medical Services, Guam Memorial Hospital, Agana.

HAWAII: Honolulu, Jan. 11-14. *Examination.* Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

IDAHO: Boise, Jan. 11-13, 1954. Executive Secretary, Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

IOWA:* *Examination.* Des Moines, Dec. 7-9. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

KANSAS: Topeka, Dec. 9-10. Sec., Dr. O. W. Davidson, 864 New Brotherhood Bldg., Kansas City.

KENTUCKY: *Examination.* Louisville, Dec. 7-9. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville.

MARYLAND: *Examination.* Baltimore, Dec. 8-11. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1.

MISSISSIPPI: *Reciprocity.* Jackson, December. Assistant Secretary, Dr. R. Whitfield, Old Capitol, Jackson 113.

NEBRASKA:* *Examination.* Omaha, June 1954. Director, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

NORTH DAKOTA: *Examination.* Grand Forks, Jan. 6-9, 1954. *Reciprocity.* Grand Forks, Jan. 9. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Examination.* Columbus, Dec. 17-19. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus 15.

OKLAHOMA:* *Examination.* Oklahoma City, June 9-10. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

PENNSYLVANIA: *Examination.* Philadelphia, January 1954. Acting Secretary, Mrs. Margaret G. Steiner, Box 911, Harrisburg.

SOUTH DAKOTA:* *Examination.* Sioux Falls, Jan. 19-20, 1954. Reciprocity can be obtained at any time between meetings of board. Executive Secretary, Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

TEXAS: Fort Worth, Nov. 12-14. Reciprocity applicants must be completed 30 days prior to the meeting date. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

UTAH: *Examination and Reciprocity.* Salt Lake City, Nov. 17. Director, Mr. Frank E. Lees, 314 State Capitol, Salt Lake City 1.

VERMONT: *Examination.* Burlington, Feb. 1954. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: *Examination.* Richmond, Dec. 3-5. *Reciprocity.* Richmond, Dec. 2. Address: Board of Medical Examiners, 631 First St. S.W., Roanoke.

WISCONSIN:* *Examination and Reciprocity.* Madison, Jan. 12-14, 1954. Sec., Dr. A. G. Koehler, 46 Washington Blvd., Oshkosh.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

OKLAHOMA: *Examination.* Oklahoma City, April 16-17. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Dec. 5. Sec., Dr. Charles D. Byrne, University of Oregon, Eugene. (Examinations during 1954 will be held in Portland on March 6, June 5, Sept. 11 and Dec. 4.)

SOUTH DAKOTA: *Examination.* Vermillion, Dec. 4-5. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

WISCONSIN: *Examination.* Milwaukee, Dec. 5. Final date for filing application is Nov. 27. Madison, April 3. Final date for filing application is March 26. Sec., Dr. W. H. Barber, 621 Ransom St., Ripon.

*Basic Science Certificate required.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1953 Clinical Meeting, St. Louis, Dec 1-4.

1954 Annual Meeting, San Francisco, June 21-25.

1954 Clinical Meeting, Miami, Florida, Nov. 30-Dec. 3.

1955 Annual Meeting, Atlantic City, N. J., June 6-10.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

AMERICAN ACADEMY OF DERMATOLOGY AND SYPHILOLOGY, Palmer House, Chicago, Dec. 5-10. Dr. John E. Rauschkolb, P. O. Box 6565, Cleveland 1, Secretary.

AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY, Netherland Plaza Hotel, Cincinnati, Dec. 14-16. Dr. C. Paul Hodgkinson, 116 South Michigan Blvd., Chicago 3, Secretary.

AMERICAN FEDERATION FOR CLINICAL RESEARCH, Eastern Section, Amphitheater, Children's Medical Center, Boston, Jan. 4. Dr. Walter Judson, Evans Memorial Hospital, Boston, Chairman.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY: EASTERN SECTION, Waldorf-Astoria, New York, Jan. 8. Dr. Francis W. Davison, Danville, Pa., Chairman.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASES, Hotel Roosevelt, New York, Dec. 11-12. Dr. Clarence C. Hare, 710 West 168th St., New York 32, Secretary.

INTER-SOCIETY CYTOLOGY COUNCIL, Philadelphia, Nov. 19-20. Dr. Paul F. Fletcher, 634 North Grand Blvd., St. Louis 3, Secretary.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, New York, Dec. 18. Dr. Franklin M. Foote, 1790 Broadway, New York 19, Executive Director.

NORTH PACIFIC SURGICAL ASSOCIATION, Victoria, B. C., Nov. 20-21. Dr. John A. Duncan, 509 Olive Way, Seattle, Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA, Palmer House, Chicago, Dec. 13-18. Dr. Donald S. Childs, 713 East Genesee St., Syracuse 2, N. Y., Secretary.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS:

MICHIGAN, H. H. Rackham Auditorium, Ann Arbor, Dec. 5. Dr. H. Marvin Pollard, 1313 East Ann St., Ann Arbor, Governor.

MIDWEST—ILL., IND., IOWA, MINN., WIS.—Hotel Schroeder, Milwaukee, Nov. 21. Dr Francis D. Murphy, 536 West Wisconsin Ave., Milwaukee 3, Chairman.

NORTH CAROLINA, Chapel Hill, Dec. 3. Dr. Elbert L. Persons, Duke Hospital, Durham, Governor.

SOUTHERN SURGICAL ASSOCIATION, The Homestead, Hot Springs, Va., Dec. 8-10. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

WESTERN SURGICAL ASSOCIATION, The Drake, Chicago, Dec. 3-5. Dr. Michael Mason, 154 East Erie St., Chicago 11, Secretary.

FOREIGN

ASSOCIATION OF SURGEONS OF GREAT BRITAIN AND IRELAND, Leeds, England, May 13-15, 1954. Dr. Henry W. S. Wright, 45 Lincoln's Inn Fields, London W.C.2, England, Honorary Secretary.

BRITISH MEDICAL ASSOCIATION, Glasgow, Scotland, July 1-9, 1954. Dr. A. MacRae, B.M.A. House, Tavistock Square, London, W.C.1, England, Secretary.

CANADIAN MEDICAL ASSOCIATION, Vancouver, B. C., Canada, June 18-22, 1954. Dr. T. C. Routley, 135 St. Clair Ave. W., Toronto 5, Ont., Canada, General Secretary.

CONFERENCE OF INTERNATIONAL UNION AGAINST TUBERCULOSIS, Madrid, Spain, Sept. 26-Oct. 2, 1954. Secretariat, Escuela de Tisiologia, Ciudad Universitaria, Madrid, Spain.

CONGRESS OF INTERNATIONAL ASSOCIATION FOR THE PREVENTION OF BLINDNESS, New York, N. Y., U. S. A., Sept. 12-17, 1954. Professor Franceschetti, 2 Avenue Mirmot, Geneva, Switzerland, Secretary-General.

CONGRESS OF INTERNATIONAL SOCIETY OF SURGERY, Paris, France, May 21-22, 1954. Dr. L. Dejardin, 141, rue Belliard, Brussels, Belgium, General Secretary.

INTERNATIONAL CANCER CONGRESS, Sao Paulo, Brazil, July 23-29, 1954. Prof. A. Prudente, 171 rua Benjamin Constante, Sao Paulo, Brazil, President.

INTERNATIONAL CONFERENCE ON THROMBOSIS AND EMBOLISM, Basle, Switzerland, July 15-19, 1954. Dr. W. Merz, Chief Medical Officer, Gynecological Clinic, University of Basle, Basle, Switzerland, Hon. Secretary.

INTERNATIONAL CONGRESS OF CLINICAL PATHOLOGY, Washington, D. C., U. S. A., Sept. 6-10, 1954. Dr. Robert A. Moore, Washington University School of Medicine, St. Louis 10, Missouri, U. S. A., Chairman, Committee on Arrangements.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Barcelona, Spain, Oct. 4-8, 1954. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

INTERNATIONAL CONGRESS ON GROUP PSYCHOTHERAPY, Toronto, Ont., Canada, Aug. 12-14, 1954. Dr. J. L. Moreno, Room 327, 101 Park Ave., New York 17, N. Y., U. S. A., Director of Organizing Committee.

INTERNATIONAL CONGRESS OF HEMATOLOGY, Paris, Sept. 6-11, 1954. Dr. Jean Bernard, 86 rue d'Assas, Paris 6e, France, Secretary.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE, Rome and Salerno, Italy, Sept. 13-20, 1954. For information write: Segreteria XIV Congresso Internazionale di Storia della Medicina, Instituto di Storia della Medicine, Citta Universitaria, Rome, Italy.

INTERNATIONAL CONGRESS OF HYDROCLIMATISM AND THALASSOTHERAPY, Dubrovnik, Yugoslavia, May 8-16, 1954. Prof. C. Plavsic, Zeleni Venac 1, Belgrade, Yugoslavia, Secretary General.

INTERNATIONAL CONGRESS OF INDUSTRIAL MEDICINE, Naples, Italy, Sept. 13-19, 1954. Professor Scipione Caccuri, Director, Institute of Industrial Medicine Policlinico, Naples, Italy, Chairman, Organizing Committee.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Stockholm, Sweden, Sept. 15-18, 1954. Professor Anders Kristenson, Karolinska Sjukhuset, Stockholm 60, Sweden, Secretary-General.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Sao Paulo, Brazil, April 26-May 2, 1954. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, University of Toronto, Toronto, Ontario, Canada, Aug. 14-21, 1954. For information write: Executive Officer, International Congress on Mental Health, 111 St. George St., Toronto, Ontario, Canada.

INTERNATIONAL CONGRESS OF NUTRITION, Amsterdam, Netherlands, Sept. 14-18, 1954. For information write: Dr. M. van Eekelen, Centraal Instituut voor Voedingsonderzoek T.N.O., 61 Catharynesingel, Utrecht, Netherlands.

INTERNATIONAL CONGRESS ON OBSTETRICS AND GYNECOLOGY, Geneva, Switzerland, July 26-31, 1954. Dr H. de Watteville, Maternité Hôpital Cantonal, Geneva, Switzerland, President.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY, University of Montreal and McGill University, Montreal, Canada, Sept. 10-11, 1954, and Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 12-17, 1954. Dr. William L. Benedict, 100 First Avenue Building, Rochester, Minnesota, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF ORTHOPEDIC SURGERY AND TRAUMATOLOGY, Berne, Switzerland, Aug. 30-Sept. 3, 1954. For information write: Professor M. Dubois, Isle-Hospital, Berne, Switzerland.

INTERNATIONAL CONGRESS OF PSYCHOLOGY, Montreal, Canada, June 7-12, 1954. For information write: Prof. H. S. Langfeld, International Union of Scientific Psychology, Eno Hall, Princeton University, Princeton, N. J., U. S. A.

INTERNATIONAL CONGRESS FOR PSYCHOTHERAPY, Zurich, Switzerland, July 21-24, 1954. Dr. H. K. Fierz, Theaterstrasse 12, Zurich 1, Switzerland, Secretary General.

INTERNATIONAL GERONTOLOGICAL CONGRESS, London and Oxford, England, July 12-22, 1954. Prof. R. E. Tunbridge, General Infirmary, Department of Medicine, The University, Leeds, England, President.

INTERNATIONAL POLIOMYELITIS CONGRESS, Rome, Italy, Sept. 6-10, 1954. Mr. Stanley E. Henwood, 120 Broadway, New York 5, N. Y., U. S. A., Executive Secretary.

INTERNATIONAL SOCIETY OF BLOOD TRANSFUSION, Paris, France, Sept. 12-19, 1954. For information write: Colonel Julliard, Societe Internationale de Transfusion Sanguine, 53 Boulevard Diderot, Paris 12e, France.

INTERNATIONAL SOCIETY FOR CELL BIOLOGY, Leiden, Netherlands, Sept. 2-9, 1954. Professor Peter J. Gaillard, University of Leiden, Leiden, Netherlands, Secretary.

INTERNATIONAL SOCIETY OF GEOGRAPHICAL PATHOLOGY Washington, D. C., U. S. A., Sept. 6-10, 1954. Professor Fred C. Rous, Hebelstrasse 24, Basle, Switzerland, Secretary-General.

JOURNEES MEDICALES, Paris, France, April 21-25, 1954. For information write: Secretariat of the Journees, 12, rue Pierre-Geofroix, Colombes (Seine) France.

LATIN AMERICAN CONGRESS OF OTORHINOLARYNGOLOGY, Caracas, Venezuela, Feb. 21-25, 1954. Dr. Victorino Marquez Reveron, Centro, Medico, Caracas, Venezuela, Secretary-General.

PACIFIC SCIENCE CONGRESS, Quezon City and Manila, Philippines, Nov. 16-28. Dr. Patrocinio Valenzuela, College of Pharmacy, University of the Philippines, Quezon City, Philippines, Secretary-General.

PAN AMERICAN CONGRESS OF OTORHINOLARYNGOLOGY AND BRONCHOESOPHAGOLOGY, Mexico, D.F., Mexico, Feb. 28-March 4, 1954. Dr. Pedro Hernandez Gonzalo, 8 No. 358, Vedado, Havana, Cuba, General Secretary.

PAN AMERICAN MEDICAL ASSOCIATION, International Medical Cruise Congress, S. S. Nieuw Amsterdam, Jan. 6-22, 1954. Dr. Joseph J. Eller, 745 Fifth Avenue, New York 22, N. Y., U. S. A., Executive Director.

PAN-PACIFIC SURGICAL CONGRESS, Honolulu, Hawaii, Oct. 7-18, 1954. Dr. F. J. Pinkerton, Suite 7, Young Bldg., Honolulu 13, Hawaii, Director General.

PERSIAN GULF MEDICAL SOCIETY, Dhahran, Saudi Arabia, Dec. 7-8. Dr. N. J. Conan Jr., Department of Internal Medicine, Arabian American Oil Company, Dhahran, Saudi Arabia, Secretary.

SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS, London, England, May 17-19, 1954. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

SOUTH AMERICAN CONGRESS OF ANGIOLOGY, Sao Paulo, Brazil, July 1954. For information write: Dr. Rubens Carlos Mayall, Rua Senador Vergueiro 73, Rio de Janeiro, Brazil, S. A.

WORLD CONGRESS OF CARDIOLOGY, Washington, D. C., and Bethesda, Md., U. S. A., Sept. 12-17, 1954. Dr. L. W. Gorham, 44 East 23d St., New York 10, N. Y., U. S. A., Secretary-General.

WORLD CONGRESS OF INTERNATIONAL SOCIETY FOR THE WELFARE OF CRIPPLES, The Hague, Netherlands, Sept. 13-17, 1954. For information write: D. C. Schaap, Centrale Vereniging, Apeldoorschweg 51, Arnhem, Netherlands.

WORLD FEDERATION OF OCCUPATIONAL THERAPISTS, Edinburgh, Scotland, August 17, 1954.

WORLD MEDICAL ASSOCIATION, Rome, Italy, Sept. 26-Oct. 2, 1954. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary-General.

DEATHS

Sabin, Florence Rena ⊕ died at her home in Denver, Oct. 3, aged 81. Dr. Sabin was born in Central City, Colo., Nov. 9, 1871. She received her degree in medicine in 1900 from Johns Hopkins University School of Medicine, Baltimore, where she had the distinction of being the first woman to be admitted and graduated, and later the first woman to hold a full professorship. Dr. Sabin was also the first woman intern at Johns Hopkins Hospital in 1900-1901; she then joined the faculty as assistant in anatomy, subsequently becoming an associate and associate professor and professor of histology. She was, in 1925, the first woman to be invited to join the staff of the Rockefeller Institute for Medical Research in New York and served until 1938, when she became an emeritus member. She then returned to Denver and later became a chairman of the health section of the state's postwar planning committee, head of the state subcommittee on health, and city manager of health and charities for Denver. She was the first woman to become an honorary member of the New York Academy of Science and a member of the American Academy of Sciences. Dr. Sabin was president of the board of the Finney-Howell Research Foundation, past president of the Western Branch of the American Public Health Association, a member of the American Association of Anatomists, of which she was first woman vice-president, 1908-1909, and the first woman president, 1924-1926, American Association of Physiologists, the Society of Experimental Biology and Medicine, serving as councilor in 1932, and the National Tuberculosis Association. She was honorary lifemember of the Harvey Society, American Association for the Advancement of Science, the Colorado State Medical Society, and American Association of University Women and was elected a director of the American Society for the Control of Cancer. In 1943 she was made an honorary national commander of the Women's Field Army. Dr. Sabin was the winner of the *Pictorial Review* 1928 achievement award of $5,000, for contributions to medical science. In 1932 she received the first national achievement award conferred by the Chi Omega Sorority and in 1935 was awarded the $5,000 M. Carey Thomas prize by Bryn Mawr (Pa.) College. In recent years she received the Trudeau medal of the National Tuberculosis Association for her "extensive studies of the physiologic activities of the chemical fractions of the tubercle bacillus," the first Jane Addams medal for distinguished service by an American woman, a Lasker Foundation award for her achievements as leading spirit in public health programs in Colorado, the American Woman's Association medal for eminent achievement, the Elizabeth Blackwell citation of the New York Infirmary, and an American Brotherhood Arts and Sciences citation. She was awarded the General Rose Memorial Hospital's 1951 medal for distinguished public service. In 1951 she was honored at ceremonies at which the new cancer wing at the University of Colorado Medical Center was dedicated as the Florence R. Sabin Building for Research in Cellular Biology. On this occasion, her colleagues honored her at a dinner and presented her with a bound volume of felicitations from all parts of the country. Dr. Sabin had honorary degrees from many universities; she wrote extensively for scientific publications, was on the editorial board of the *Anatomical Record*, and was the author of "An Atlas of the Medulla and Mid-Brain."

Siegler, Samuel Lewis ⊕ Brooklyn; born in Brooklyn Nov. 11, 1894; Fordham University School of Medicine, New York, 1918; specialist certified by the American Board of Obstetrics and Gynecology; member of the Endocrine Society; fellow of the American College of Surgeons, American Society for the Study of Sterility, British Society for the Study of Sterility, Brooklyn Gynecological Society and the New York Academy of Medicine; past president of the East New York Medical Society; vice-president of the New York Society for the Study of Sterility; honorary fellow of the Argentina Society for Study of Sterility; in January, 1945, at the annual meeting of the Planned Parenthood Federation of America he was cited for his volume on "Human Fertility in the Female" as a contribution to the diagnosis and treatment of infertility in women; this book was translated into Spanish, French, and Italian; attending obstetrician and gynecologist, Brooklyn Women's Hospital; director of obstetrics and gynecology, Unity Hospital; assistant attending in obstetrics and gynecology, Greenpoint Hospital; associate staff, Jewish Hospital; produced the motion pictures, "Sterility, Its Causes, Investigation and Treatment" and "Ovulation with Pregnant Mare's Serum"; served during World War I; on the editorial board of *Fertility and Sterility*; died in the Long Island College Hospital Sept. 15, aged 58, of encephalomyelitis.

Thompson, Ira Fay ⊕ Beloit, Wis.; born in Lawrence, Ill., Oct. 1, 1877; Bennett College of Eclectic Medicine and Surgery, Chicago, 1900; member of the American Public Health Association; elected to the board of directors in 1937 of the Wisconsin Anti-Tuberculosis Association of which he was president from 1945 to 1948, and a member of the senior council at the time of his death; served as vice-president and president of the state board of health; for several years worked with the state board of health, serving as deputy state health officer from 1916 to 1919, as organizer and director of the bureau of venereal diseases from 1919 to 1922, and as deputy and later acting health commissioner of the Milwaukee health department from 1922 to 1925; for seven years worked with the Milbank Health Foundation as assistant to the health commissioner in Syracuse, N. Y.; on his return to Wisconsin in 1932, served as Racine health commissioner until 1945; at one time on the faculty of Marquette University School of Medicine; died July 5, aged 75, of cerebral hemorrhage.

Taquino, George James ⊕ New Orleans; born in New Orleans Oct. 19, 1884; Medical Department of Tulane University of Louisiana, New Orleans, 1911; specialist certified by the American Board of Otolaryngology; professor of otorhinolaryngology and head of the department at Louisiana State University School of Medicine; served during World War I; member of the Southeastern Surgical Congress, American Academy of Ophthalmology and Otolaryngology, American Laryngological, Rhinological and Otological Society, and the American Broncho-Esophagological Association; fellow of the International College of Surgeons and the American College of Surgeons; consulting bronchoscopist, U. S. Public Health Service; received the honorary doctor of science degree from Loyola University of the South in 1942; affiliated with Charity Hospital of Louisiana, Touro Infirmary and Hotel Dieu, Sister's Hospital, where he died Aug. 29, aged 68, of dissecting aneurysm of the aorta.

Soper, Horace Wendell ⊕ St. Louis; born in Hillsboro, Ill., in 1867; Washington University School of Medicine, St. Louis, 1894; specialist certified by the American Board of Internal Medicine; an Affiliate Fellow of the American Medical Association; member of the American Gastro-Enterological Association; fellow of the American College of Physicians; past president of the Missouri chapter of the National Society for the Advancement of Gastro-Enterology; past president of the National Gastro-Enterological Association; secretary of the Section on Gastro-Enterology and Proctology of the American Medical Association from 1917 to 1920 and chairman, 1921-1922; consultant, De Paul and St. Luke's hospitals, co-founder of the Soper Mills Clinic; author of "Clinical Gastroenterology"; died in Barnes Hospital Sept. 28, aged 86, of heart disease.

De Lamater, Hasbrouck ⊕ St. Joseph, Mo.; born Jan. 12, 1870; Medical College of Alabama, Mobile, 1901; an Associate Fellow of the American Medical Association; past president of the Buchanan County Medical Society; director of

⊕ Indicates Member of the American Medical Association.

hygiene with city public schools from 1916 until his retirement in 1942 when he received the William A. Howe award from the American School Health Association for his outstanding service in school health work; fellow of the American Public Health Association; a charter member of the American Association of School Physicians; affiliated with St. Joseph's Hospital and the Missouri Methodist Hospital, where he died Sept. 24, aged 83, of cardiac decompensation.

Murphy, John Francis ✙ Providence, R. I.; born in Woonsocket, R. I., Jan. 22, 1901; University of Pennsylvania School of Medicine, Philadelphia, 1927; specialist certified by the American Board of Obstetrics and Gynecology; member of the New England Obstetrical and Gynecological Society; instructor in obstetrics at Harvard Medical School in Boston; affiliated with Rhode Island, Charles V. Chapin, and Providence Lying-In hospitals; on the courtesy staffs of the Memorial Hospital, Pawtucket, and the Roger Williams and St. Joseph's hospitals; died Aug. 30, aged 52, of hypertensive cardiovascular disease.

Smith, Clarence Austin ✙ Seattle; born in Derby, Conn., Jan. 24, 1861; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; an Associate Fellow of the American Medical Association; fellow of the American College of Physicians; president of the King County Medical Society in 1898 and the Washington State Medical Association in 1909; from 1896 to 1898 a member of the Washington Board of Medical Examiners; formerly city health officer; editor emeritus of *Northwest Medicine,* which he helped to found in 1903 when he became editor; died Sept. 10, aged 92, of chronic myocarditis.

Newberger, Charles ✙ Chicago; born Oct. 13, 1883; Rush Medical College, Chicago, 1909; assistant professor of obstetrics and gynecology emeritus at the University of Illinois College of Medicine; specialist certified by the American Board of Obstetrics and Gynecology; member of the Central Association of Obstetricians and Gynecologists; served as consultant for the maternity division, maternal and child health, Illinois State Department of Public Health; senior attending obstetrician at Mount Sinai Hospital, where he died Sept. 25, aged 69, of acute myocardial infarction.

Aurin, Emil Carl, Fort Ogden, Fla.; Eclectic Medical Institute, Cincinnati, 1897; died Aug. 18, aged 77, probably of coronary occlusion.

Baldwin, William Sherman, East St. Louis. Ill.; Jenner Medical College, Chicago, 1907; died in St. Mary's Infirmary in St. Louis Aug. 1, aged 77.

Bancroft, George Raymond Jr. ✙ Kennebunk Port, Maine; Tufts College Medical School, Boston, 1944; certified by the National Board of Medical Examiners; died Aug. 14, aged 33, of coronary occlusion.

Bellehumeur, David Stanislaus ✙ St. Petersburg, Fla.; Laval University Medical Faculty, Montreal, Canada, 1896; member of the Massachusetts Medical Society; died in Mound Park Hospital Aug. 20, aged 72, of fracture of the right shoulder and the right hip received in a fall.

Bennet, Pearl R., Terre Haute, Ind.; Eclectic Medical Institute, Cincinnati, 1905; died in Danville, Ill., July 4, aged 75.

Bitten, Robert Mooney ✙ Jersey City, N. J.; College of Physicians and Surgeons, Boston, 1929; Université Catholique de Louvain Faculté de Médecine, Belgium, 1930; member of the American Society of Anesthesiologists, Inc.; affiliated with Greenville and Margaret Hague Maternity hospitals; died in the Medical Center Sept. 16, aged 56, of metastatic carcinoma of the lumbar spine.

Black, Glenn Raymond ✙ Franklin Township, Ohio; Hahnemann Medical College and Hospital of Philadelphia, 1949; died Aug. 31, aged 31, of accidental drowning.

Blechman, Elihu David, Miami Beach, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1927; died Aug. 27, aged 50, of coronary thrombosis.

Bond, Van H. ✙ Hornersville, Mo.; Missouri Medical College, St. Louis, 1893; died in the Dunklin Memorial Hospital in Kennett, Sept. 4, aged 83.

Bryans, Charles Iverson ✙ Augusta, Ga.; University of Georgia School of Medicine, Augusta, 1904; professor emeritus of clinical ophthalmology and otolaryngology at his alma mater, where he was a member of the faculty since 1905; for many years affiliated with University and Wilhenford hospitals; died July 18, aged 70, of cerebral thrombosis.

Burbridge, Leonidas T., New Orleans; Meharry Medical College, Nashville, Tenn., 1893; died Sept. 14, aged 83.

Cameron, Donald Archibald, Royal Oak, Mich.; Detroit College of Medicine, 1915; served during World War I; died in Charlevoix Sept. 6, aged 64, of chronic nephritis and coronary thrombosis.

Challed, Don Sheridan ✙ Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1928; member of the American Society of Anesthesiologists; past president of the Linn County Medical Society; served during World War II; formerly health officer; affiliated with Mercy Hospital and St. Luke's Methodist Hospital, where he died Sept. 14, aged 48, of portal cirrhosis.

Cobb, Benjamin Elden, Unionville, Mo.; St. Louis University School of Medicine, 1912; died Aug. 25, aged 73, of uremia and chronic myocarditis.

Comerer, Jacob Alvin, Allentown, Pa.; Baltimore Medical College, 1897; died Sept. 5, aged 85, of arteriosclerosis.

Crawford, James Howard ✙ Columbiana, Ala.; Tulane University of Louisiana School of Medicine, New Orleans, 1921; in 1930 was chosen Shelby County's "Man of the Year"; died in Valdosta, Ga., Sept. 19, aged 59, of coronary occlusion.

Criscillo, Serafino Lewis ✙ New York City; New York Medical College, Flower and Fifth Avenue Hospitals, New York, 1931; died Aug. 15, aged 49, of left ventricular failure.

Derbyshire, Albert L. ✙ San Francisco; Medical College of Indiana, Indianapolis, 1886; served as acting assistant surgeon in the U. S. Public Health Service Reserve; died Sept. 5, aged 102, of bronchopneumonia and arteriosclerosis.

Duncan, Marion W., Centerton, Ark.; Memphis (Tenn.) Hospital Medical College, 1899; died Sept. 8, aged 84, of congestive heart disease.

Einhorn, Max ✙ New York City; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Germany, 1884; an Associate Fellow of the American Medical Association; member of the American Association for Thoracic Surgery; former professor of medicine at the New York Post-Graduate Medical School and Hospital; consultant at the Lenox Hill Hospital, where he died Sept. 25, aged 91.

Fleming, Charles LeRoy ✙ Penns Grove, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1906; consulting member of the staff of the Salem County Memorial Hospital in Salem; an official of the Penns Grove National Bank and Trust Company, where he served on the board of directors for several years; died Sept. 13, aged 68, of cerebral hemorrhage.

Fraden, William, New York City; University and Bellevue Hospital Medical College, New York, 1923; served during World War II; died in August, aged 52.

Gates, Ira Norman ✙ Seattle; University of Vermont College of Medicine, Burlington, 1906; an Associate Fellow of the American Medical Association; affiliated with Virginia Mason Hospital, where he died Sept. 5, aged 76.

Gilmore, Howard Manning ✙ Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1921; member of the American Society of Anesthesiologists; on the staff of Mount Carmel Hospital, where he died Sept. 11, aged 58.

Gould, Arthur L. ✙ Freeport, Maine; Medical School of Maine, Portland, 1905; health officer; affiliated with Brunswick (Maine) Hospital; drowned in Luther Pond near Jackman July 3, aged 70, when he fell from a canoe while fishing.

Gregory, Lorenzo Theophilus, Kershaw, S. C.; Medical College of the State of South Carolina, Charleston, 1896; served as mayor and as chairman of the school board; director of the Bank of Kershaw and the Springs Cotton Mills; died July 28, aged 83, of chronic emphysema of the lungs.

Henry, Frank Charles, Verona, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; formerly coroner of Middlesex County, and New Jersey Assemblyman; served as health officer of Perth Amboy; practiced in Perth Amboy, where he was affiliated with Perth Amboy Hospital, where he died Aug. 31, aged 82, of carcinoma of the sigmoid.

Hewitt, John Michael ✠ Major, U. S. Army, retired, Los Angeles; Niagara University Medical Department, Buffalo, 1889; formerly professor of military science and tactics at Cornell University Medical School in New York; served during World War I; entered the medical corps of the U. S. Army as a first lieutenant in 1917 and retired Sept. 30, 1931, by operation of law; died July 26, aged 85, of carcinoma of the esophagus.

Howland, Charles Francis, Westfield, N. J.; Fordham University School of Medicine, New York, 1916; served in France with the American Expeditionary Forces during World War I; died Sept. 22, aged 79.

Johnston, Harold Alvah, Ingomar, Pa.; University of Pittsburgh School of Medicine, 1931; died in the Allegheny General Hospital, Pittsburgh, July 28, aged 46.

Johnstone, Charles William ✠ Du Bois, Pa.; College of Physicians and Surgeons, Baltimore, 1906; affiliated with Du Bois and Maple Avenue hospitals; died July 30, aged 72, of carcinoma of the lung.

Jones, Mortimer Dunham, Ridgewood, N. J.; Columbia University College of Physicians and Surgeons, New York, 1900; medical superintendent of the Kings County Hospital in Brooklyn from 1910 to 1929, when he became medical superintendent of the New York City Hospital, Welfare Island; died Sept. 21, aged 76, of coronary occlusion.

Kalayjian, Dikran Sarkis ✠ Detroit; Rush Medical College, Chicago, 1902; an Associate Fellow of the American Medical Association; member of the South Dakota State Medical Association; died Aug. 10, aged 86, of carcinoma of the colon.

Katzman, George Manual ✠ Philadelphia; University of Illinois College of Medicine, Chicago, 1926; affiliated with the regional office of the Veterans Administration; died Aug. 30, aged 52, of coronary insufficiency.

Keeling, Irene Cutter ✠ Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, Kan., 1929; affiliated with University of Kansas Medical Center, Kansas City, Kan., and Kansas City General Hospital; died in Research Hospital, Sept. 29, aged 54, of ulcerative ileocolitis.

Kimmelman, Simon ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1902; died Sept. 26, aged 78, of coronary occlusion.

Knapp, Charles Whittemore ✠ Newtown, Conn.; Columbia University College of Physicians and Surgeons, New York, 1912; formerly on the faculty of his alma mater; served overseas during World War I; formerly practiced in Greenwich, Conn., where he was chairman of the board of health, on the staff of St. Luke's Convalescent Hospital and Greenwich Hospital, where he was chief of staff and where he died Sept. 14, aged 68, of pulmonary edema.

Laslie, Carney Graham ✠ Montgomery, Ala.; College of Physicians and Surgeons, Baltimore, 1903; died Sept. 14, aged 75, of coronary thrombosis.

Levy, Erich L. ✠ New York City; Friedrich-Wilhelms Universität Medizinische Fakultät, Berlin, Germany, 1927; affiliated with Jewish Memorial Hospital and Medical Arts Hospital in New York City and Queens General Hospital in Jamaica, where he died Sept. 9, aged 52.

Lynch, Richard Alphonsus, Boston; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1919; physician for the Shubert theatres for many years and composer of several songs; died Sept. 9, aged 63.

McBryde, Malcolm Hugh, Reidsville, N. C.; University College of Medicine, Richmond, 1901; died in the Annie Penn Memorial Hospital July 14, aged 75, of cerebral thrombosis.

McCord, Ollie Hagan ✠ Woodruff, S. C.; Atlanta School of Medicine, 1910; died July 25, aged 67, of arteriosclerosis.

MacKenzie, Oliver Reynolds ✠ Walled Lake, Mich.; Marquette University School of Medicine, Milwaukee, 1935; died Sept. 17, aged 44, of injuries received in an automobile accident.

Malloch, Thomas Archibald, White Plains, N. Y.; McGill University Faculty of Medicine, Montreal, 1913; M.R.C.P., London, 1919; F.R.C.P., London, 1930; served with the Canadian Army during World War I; for many years librarian of the New York Academy of Medicine; author and editor of several books; died in Tarrytown (N. Y.) Hospital Sept. 19, aged 66, of myocardial infarction and coronary thrombosis.

Martin, William Riley, New Bern, N. C.; Howard University College of Medicine, Washington, D. C., 1925; died Aug. 22, aged 56, of coronary thrombosis.

Maxwell, George Madison ✠ Roanoke, Va.; North Carolina Medical College, Davidson, 1901; Jefferson Medical College of Philadelphia, 1906; fellow of the International College of Surgeons; served during World Wars I and II; died in the Veterans Administration Hospital Sept. 24, aged 77.

Meigs, Benjamin Lyle, Long Beach, Calif.; State University of Iowa College of Medicine, Iowa City, 1902; served during World War I; formerly affiliated with Long Beach Community and Seaside Memorial hospitals; died in the Harriman-Jones Clinic Hospital Sept. 15, aged 74, of carcinoma of the colon.

Meredith, Charles James ✠ Valley City, N. D.; University of Manitoba Faculty of Medicine, Edmonton, Alberta, Canada, 1921; fellow of the American College of Surgeons; affiliated with Mercy Hospital; died Sept. 20, aged 58.

Miles, William Clinton ✠ Griffin, Ga.; Atlanta College of Physicians and Surgeons, 1908; past president of the Spalding County Medical Society; served during World War I; died July 12, aged 71, of arteriosclerosis.

Miller, Elmer Manton ✠ Woodsville, N. H.; Baltimore Medical College, 1898; died July 1, aged 80, of coronary sclerosis.

Milliken, Howard Augustus ✠ Hallowell, Maine; Medical School of Maine, Portland, 1899; died in the Augusta General Hospital in Augusta, recently, aged 79, of ruptured esophageal varices.

Minahan, Thomas, Niles, Ohio; Cleveland Homeopathic Medical College, 1898; died Sept. 6, aged 91, of hypostatic pneumonia.

Moosey, Marye Maxine, Tacoma, Wash.; University of Pittsburgh School of Medicine, 1951; resident at St. Joseph's Hospital; died July 13, aged 36, of injuries received in an automobile accident.

Moxey, Albert Frankish ✠ Havertown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1906; for many years practiced in Philadelphia, where he was supervisor of the public schools and served on the staffs of the Temple University, Memorial and Episcopal hospitals; affiliated with the Hospital of the University of Pennsylvania in Philadelphia, where he died Sept. 20, aged 69, of leukemia.

DIED WHILE IN MILITARY SERVICE

McCaslin, Hugh Towles, Cincinnati; Columbia University College of Physicians and Surgeons, New York, 1952; interned at Cincinnati General Hospital; first lieutenant in the medical corps of the U. S. Air Force; killed in an automobile accident at Randolph Air Field Base, Texas, Sept. 1, aged 25.

GOVERNMENT SERVICES

MEDICAL AND HEALTH BUDGETS OF FEDERAL AGENCIES

The federal government operates or participates in more than 60 health, medical, and related programs scattered among at least 19 different departments, independent agencies, or commissions. The cost is in excess of $1,775,882,197 this fiscal year. A breakdown of the budgets follows:

Department of Health, Education and Welfare ($340,553,000 Total)

Office of Vocational Rehabilitation—$23,655,500

The bulk of this appropriation will be apportioned to states having programs furnishing handicapped persons with medical examinations, surgical and therapeutic treatment, hospitalization, prosthetic appliances, occupational tools and aids, vocational training, and funds for maintenance. The states are required to match these federal grants on a dollar-for-dollar basis.

Food and Drug Administration—$6,250,000

This appropriation is used to enforce laws designed to protect the consuming public against adulteration and misbranding of foods, drugs, and cosmetics.

Children's Bureau—$31,525,000

The Children's Bureau operating under the Social Security Administration makes this money available to states having programs for crippled children, maternal and child health and welfare services. The states are by law required to match these grants.

Bureau of Public Assistance (Medical and Health Payments) —Approximately $50,000,000.

This money will be used either for direct payments to physicians and hospitals and for medical supplies or to the beneficiaries themselves for payment for such services and supplies: (1) old age assistance, (2) blind, (3) needy permanently and totally disabled, and (4) dependent children. The bureau operates under the Social Security Administration. By law the states support approximately 40% of the total cost of these programs.

(NOTE.—The following 13 medical programs operate under the U. S. Public Health Service.)

Office of Surgeon General, Public Health Service—$2,900,000

This appropriation covers administrative expenses of the Office of the Surgeon General and the cost of the following programs: (1) evaluation of public health needs; (2) development and coordination of nursing resources; (3) international health activities wherein the U. S. P. H. S. acts for Department of State, Foreign Operations Administration, and other government agencies; and (4) general duty training.

Tuberculosis Control—$6,000,000

Grants to states providing diagnostic and treatment clinics, mass casefinding, and follow-up service total $4,275,000 of this appropriation. These grants must be matched by a minimum of one state dollar for each two federal dollars. The remainder of the appropriation finances direct activities of the Public Health Service for such programs as mass x-ray surveys, studies, demonstrations, drug evaluation, and BCG vaccinations.

Venereal Disease Control—$5,000,000

Grants to states having programs of venereal disease detection, treatment, and control amount to $1,976,500. A portion of this amount must be matched by a minimum of one state dollar for each two federal dollars. The federal government also furnishes technical assistance amounting to $2,268,500, mostly to pay federal employees assigned to state programs. The balance finances direct activities of the U. S. P. H. S. for mass examinations, drug evaluation, studies, and demonstrations.

General Assistance to States—$13,250,000

Grants to states must be matched on the basis of one state dollar for each two federal dollars.

Communicable Disease Control (Communicable Disease Center, Atlanta, Ga.)—*$5,060,000*

The Communicable Disease Center carries on programs of study in epidemiology, laboratory diagnostic services, and special projects in assistance to states.

Engineering, Sanitation, and Industrial Hygiene—$3,162,500

Five programs are supported by this appropriation: (1) water supply and water pollution control through several river basin offices that work with state and interstate agency officials, $903,500; (2) study of effects of radioactive substances on individuals, partially in cooperation with the Atomic Energy Commission, $275,000; (3) general sanitation, consultant services with states concerning milk and restaurant inspection, garbage disposal, food handling by interstate carriers, etc., $799,000; (4) consultation with states and studies of health hazards in manufacturing, mining, etc., $550,000; and (5) environmental research activities of Cincinnati office, $547,500. The balance is for administrative expenses.

Alaska—Disease and Sanitation Investigations and Control—$1,082,000

This appropriation will be divided equally between several grants to the territory and the financing of the Arctic Health Research Center at Anchorage.

Hospitals and Medical Care—$33,100,000

These funds are used for operational cost and maintenance of hospitals and health services in caring for American seamen, Coast Guard and Public Health Service personnel and their dependents, federal employees injured at work, leprosy patients, and narcotic addicts.

Foreign Quarantine Service—$2,900,000

This service operates about 250 quarantine stations on borders of the United States. It also operates about 25 medical examination stations on foreign soil for the examination of aliens seeking visas to enter the United States. Inspections are made of all seagoing vessels and aircraft entering the United States.

National Institutes of Health (total)—*$71,153,000*

- *National Cancer Institute—$20,237,000*
- *Mental Health Institute—$12,695,000*
- *National Heart Institute—$15,168,000*
- *Dental Health Institute—$1,740,000*
- *Microbiological Institute—$5,738,000*
- *Institute For Neurological Diseases & Blindness—$4,500,000*
- *Institute of Arthritis & Metabolic Diseases—$7,000,000*
- *General Funds—$4,675,000*

Hospital Construction Grants—Obligational Cash—$65,000,000

This appropriation will assist the financing of *new* construction under the Hill-Burton Act.

Grants for Hospital Construction — Liquidational Cash—$19,700,000

This appropriation is used to liquidate previously authorized construction now in various stages of completion.

Hospital Construction Administrative Expenses—$875,000

This appropriation is used for salaries and expenses of the hospital construction program at the federal level.

Veterans Administration—($747,415,264 Total)

Medical, Hospital and Domiciliary Administration—$7,757,900

This total covers expenses of administration of the Department of Medicine and Surgery in the central office and the six area medical offices.

Research—Approximately $5,500,000

The Veterans Administration conducts research by physicians and other scientists in such fields as radioactive medicine, with most of the work done in laboratories located within VA hospitals.

New Construction and Contract Liquidation—$38,685,664

Included in this figure is $21,185,664 to liquidate contracts for existing hospital construction so as to place this program on a pay-as-you-go basis. Another $17,500,000 is for planning and designing 1000-bed neuropsychiatric hospitals at San Francisco and Topeka, Kan., a 250-bed addition to the Houston VA hospital, and to start on construction of ancillary buildings at the three cities.

Supply Depot Operations—Approximately $1,350,000

Contract Hospitalization—$20,583,100

Non-VA hospitals, including federal, state, and private, at the end of the fiscal year were caring for 5,866 veterans on a contract basis. The largest single category was psychotic patients (3,084).

Domiciliary Care—$24,248,200

This total provides care for about 17,000 veterans who are incapacitated to the point of being unemployable but not in need of full hospital care. The agency operates 17 domiciliary facilities, 14 in conjunction with VA hospitals.

Outpatient Care—$92,677,900

Of this figure, about $7,000,000 is paid to physicians and $23,000,000 to dentists under the home-town care program. It calls for fees to doctors designated by local or state societies for services to veterans. The remaining $62,000,000 is for VA's outpatient care program in clinics.

Inpatient Care—$555,000,000

This covers inpatient care in 163 VA hospitals and provides an authorized 114,000 beds daily. Patients being treated for diseases or disabilities were as follows: 35.6% service-connected, 63.8% non-service-connected, and 0.6% nonveteran cases.

Medical Education and Training—$1,300,000

The VA operates training programs for physicians and other VA personnel in both the medical specialties and auxiliary services.

Capital Expansion—$312,500

This amount is available for expanding or altering about 100 VA clinics, mostly located in regional offices.

Department of Defense—($533,311,000 Total)

Army Medical Services—Approximately $238,994,000

This total is broken down by the Army as follows: About $84,000,000 for salaries of military personnel, including doctors in uniform; $76,975,000 for supplies and equipment; $62,530,000 for civilian personnel (salaries of physicians, dentists, nurses, technicians, etc.); and $15,489,000 for research, training, and other miscellaneous items.

Naval Medical Services—Approximately $161,429,000

The Navy's budget is broken down as follows: about $78,000,000 for salaries of military medical personnel; $36,529,000 for supplies and equipment; $28,730,000 for civilian medical personnel; and $18,170,000 for research, training, and other expenses.

Air Force Medical Services—Approximately $132,801,000

Total spending this year is divided about as follows: About $87,000,000 for salaries of military medical personnel; $18,874,000 for civilian medical personnel; and $26,927,000 for supplies, equipment, research, and other expenses.

Office of Assistant Secretary of Defense (Health and Medical)—Approximately $87,000

This figure covers salaries, travel, and administration for staff and consultant personnel.

Department of State—($14,127,733 Total)

World Health Organization—$2,993,400

The United States contribution for this year represents 33⅓% of WHO's total budget. Programmed spending of all available WHO funds, including those from the United States, is broken down as follows: Administration and salaries, 41%; advisory services to governments (consultants), 35.6%; contributions to regional offices for field programs, 13.6%; expenses of organization meetings, 3.8%; fact-gathering and administering international sanitary regulations, 3.8%; and expenses of expert committees studying various diseases, 2.2%.

Pan-American Sanitary Bureau—Approximately $1,320,000

The Pan-American Sanitary Bureau, the regional arm of WHO, has a budget for this calendar year of $2,031,800, of which the United States contributes 66%.

International Children's Emergency Fund—$9,814,333

The United States share of the Fund is about 60% of the total budget of about $16,000,000. The fund has allocated money for the current year as follows: Maternal and child welfare services and training, 37.8%; mass health programs to combat communicable diseases, 25.8%; child nutrition, including long-range feeding and milk conservation, 21.2%; and emergency feeding in disasters, 15.2%.

Department of Labor—($8,960,000 Total)

Bureau of Employees' Compensation—Approximately $8,500,000

This activity, covering specified federal employees and beneficiaries, corresponds to the Workmen's Compensation Agencies in the states. The total beneficiary coverage is currently estimated at 2,300,000. Benefits include payments of compensation for disability and death, the furnishing of medical and hospital services and supplies, treatment, and funeral and burial expenses.

Health and Safety Program—Approximately $460,000

The Bureau of Labor Standards within the Department of Labor has available $700,000 for its activities. From this total, about $400,000 will be spent for the promotion of industrial safety. An additional $60,000 will be used in programs for re-employment of the physically handicapped.

Foreign Operations Administration—($24,500,000 Total)

Technical Assistance Programs—$24,500,000

Money is given backward countries for training and demonstrations leading to setting up of national and local health services.

Department of Interior—($27,258,600 Total)

Bureau of Indian Affairs—$21,400,000

This money is used for operation of 59 Indian Bureau hospitals, sanitariums, and clinics; contract hospitalization; preventive and curative services, such as medical and dental field clinics; practical nurse training; and administration and salaries.

Bureau of Mines—$5,060,000

This money is spent for mine inspection and investigations, investigation of accidents and rescue work, and explosive testing and research.

Alaskan Mental Health Program—$798,600

This item provides contract hospitalization in the United States for Alaskan whites and Indians judged insane.

Department of Commerce—($621,000 Total)

Bureau of Standards—Approximately $300,000

Tests are being made on such things as hearing aid batteries, substitutes for blood plasma, automatic blood pressure recorder, heart pump, and artificial kidney.

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Civil Aeronautics Administration—$321,000

This item is for salaries and administrative expenses in carrying out the medical portion of the authority's flight safety program.

Department of Treasury—($2,790,000 Total)

Bureau of Narcotics—$2,790,000

The bureau's role is enforcement of the narcotic laws and the suppression of illegal traffic in drugs.

Department of Justice—($1,326,000 Total)

Bureau of Prisons—$1,326,000

This figure is for payments to Public Health Service for all medical and dental services for some 18,000 prisoners in 27 federal penal institutions.

Independent Offices—($68,019,600 Total)

National Science Foundation—$8,000,000

The foundation initiates and supports basic scientific research, evaluates research of governmental agencies, and correlates research programs of others. It awards scholarships and graduate fellowships in the sciences and fosters exchange of scientific information among scientists of the United States and foreign countries.

Federal Civil Defense Administration—Approximately $26,650,000

This money is divided into $22,500,000 for federal stockpiling; $3,900,000 for equal matching funds to states for stockpiling of medical items; and $250,000 for operations.

Atomic Energy Commission (Medical)—Approximately $26,565,000

This money will go for research and for vocational and special training, including fellowships.

Health Resources Advisory Committee—Approximately $91,000

This committee advises the director of the Office of Defense Mobilization on those health resource problems concerning medical manpower and blood.

National Advisory Committee to Selective Service—$265,000

This appropriation covers administration and salaries for committee headquarters and 51 state offices.

Panama Canal Zone (Medical)—$5,448,600

The Panama Canal Zone Government operates four hospitals, having a total capacity of approximately 1,400 beds. It also operates six outpatient medical clinics, two outpatient dental clinics, one school hygiene unit, a visiting nurse service, a quarantine service, a veterinary service, a sanitation and insect control program, and two large city health departments.

Federal Trade Commission (Medical)—Approximately $1,000,000

Miscellaneous—($7,000,000 Total)

Commission on Intergovernmental Relations—$500,000

This commission investigates all relationships between the federal government and state and local governmental units.

Commission on Organization of the Executive Branch of the Government—$500,000

This commission, under the chairmanship of Herbert Hoover, has until May 31, 1955, to complete a study of operations of the Executive Department, with a view toward effecting economies and promoting efficiency.

Federal Employees Health Programs—Approximately $6,000,000

The 79th Congress authorized the heads of federal agencies to provide health services designed to minimize illness and help United States employees to remain on the job. Clinics are established and maintained in federal agencies wherever there are large concentrations of employees.

ARMY

Dr. Bayne-Jones Receives "Super-Grade" in Army Medical Service.—Promotion ceremonies for Dr. Stanhope Bayne-Jones, technical director of research, Medical Research and Development Board, were held in the Office of the Surgeon General on Sept. 28. The promotion to grade GS-17 came as the result of a redistribution of the so-called super grade jobs from the Department of the Army. Dr. Bayne-Jones is the first to achieve a position of this high stature in the history of the Army Medical Service. As expert consultant to the chairman of the Army Medical Research and Development Board, he is responsible for insuring close coordination between the Army's medical research effort, similar programs sponsored by other federal agencies, and 115 cooperating civilian institutions.

During World War II, Dr. Bayne-Jones served in the Office of the Surgeon General as deputy chief of the preventive medicine service, director of the U. S. Typhus Commission and administrator of the Army Epidemiology Board. He was a brigadier general in the medical corps reserve, having been affiliated with the Army reserve program since 1915. After World War II and prior to his current assignment, he served as president of the joint administrative board of the New York Hospital-Cornell Medical Center in New York. In World War I, he served with both the British and the American armies, and after the war was the sanitary inspector for the Army of Occupation in Germany. Dr. Bayne-Jones has been awarded the Distinguished Service medal, Silver Star (two oak leaf clusters), the U. S. Typhus Commission medal, the Military Cross, Order of the British Empire, and the French Croix de Guerre, with bronze star.

Personal.—Capt. Joseph E. Molloy, of Chicago, has accepted a Regular Army commission in the Medical Corps at Brooke Army Medical Center, where he is on duty in the orthopedic service.

PUBLIC HEALTH SERVICE

Regular Corps Examination for Medical Officers.—A competitive examination for appointment of medical officers to the regular corps of the United States Public Health Service will be held on Feb. 2-4, 1954, at a number of points throughout the United States. Applications must be received no later than Dec. 24, 1953. The regular corps is a commissioned officer corps of members of various medical and scientific professions, appointed in appropriate categories, such as medicine, dentistry, nursing, engineering, and pharmacy. Appointments will be made in the grades of assistant surgeon and senior assistant surgeon. All commissioned officers are subject to change of station and assignment as necessitated by the needs of the service. Appointments are permanent and provide opportunities to qualified physicians for a career in clinical medicine, research, and public health.

The requirements for both appointments are United States citizenship, at least 21 years of age, and graduation from a recognized school of medicine. In addition, the assistant surgeon must have at least seven years of collegiate and professional training and appropriate experience, and the senior assistant surgeon must have at least 10 years of collegiate and professional training and appropriate experience.

Entrance pay for an assistant surgeon with dependents is $6,017 per annum; for senior assistant surgeon with dependents, $6,918. These figures include the $1,200 annual additional pay received by medical officers as well as subsistence and rental allowance. Provisions are made for promotion at regular intervals up to and including the grade of senior surgeon and for promotion by selection to the grade of medical director. Retirement pay after 30 years of service or at the age of 64 is three-fourths of annual basic pay at the time of retirement. Minimum disability retirement pay is ordinarily one-half of annual basic pay at the time of retirement. Additional information may be obtained from the chief, Division of Commissioned Officers, Public Health Service, Department of Health, Education, and Welfare, Washington 25, D. C.

FOREIGN LETTERS

CHILE

Isoniazid Treatment of Extrapulmonary Tuberculosis.—Drs. R. Anetto, G. Chaparro, and F. Velasco of Salvador Hospital in Valparaiso reported on isoniazid therapy of extrapulmonary tuberculosis in the *Aparato Respiratorio y tuberculosis.* They used an initial dose of 3 mg. of isoniazid per kilogram of body weight that was increased from 8 to 10 mg. per kilogram in treating patients with tuberculous meningitis. The patients were divided in the following groups: (1) 6 who received streptomycin (intramuscularly and intrathecally) with *p*-aminosalicylic acid and who, when relapses occurred, were given isoniazid alone; (2) 4 who were given streptomycin and isoniazid who had had no relapses; and (3) 11 in whom isoniazid was the only drug used.

Good results were characterized by (1) disappearance of headaches and anorexia within two weeks, (2) disappearance of the meningeal syndrome within three weeks, (3) gradual return of the spinal fluid to normal, (4) fall in the sedimentation rate paralleling the clinical improvement, (5) gain in weight, and (6) rapid subsidence of fever in comparison with that following the older treatments. Good results were obtained within from one and a half to five months in all of the patients with relapse, in three of the four patients treated with the combined therapy (the fourth patient died), and in two of the patients treated with isoniazid alone.

Dr. S. Del Rio and associates used isoniazid to treat 41 patients with tuberculous laryngitis and bronchitis. All 41 patients had pulmonary lesions, which were minimal in 1, moderate in 12, and advanced in 28. A total of 31 patients who were benefited by isoniazid had been previously treated with *p*-aminosalicylic acid and streptomycin without benefit. All the diagnoses were made by endoscopy, a second examination being performed 45 days after the beginning of the treatment and a third at its completion. The results of the treatment were evaluated 90 days after the initiation of therapy, and the patients' conditions were classified as improved, static, or worse. Improvement was noted in 36 of the patients, 18 of whom were judged to be completely cured. In three of the patients there were no changes and the condition of two became worse. Statistical analysis showed that the age and the sex distribution was not significantly different in the group treated with streptomycin and that treated with isoniazid. Thus, whereas isoniazid produced improvement in 36 (88%) of the patients, the therapy with *p*-aminosalicylic acid and streptomycin or streptomycin alone in a control series produced regression in only 66%. This difference was found to be statistically significant. Prior to the advent of streptomycin and *p*-aminosalicylic acid, only 25% showed improvement. The authors concluded that isoniazid not only gives a better result but that the improvement thus obtained occurs much faster.

Anniversary of Chilean Society of Dietetics.—The 10th annual meeting of the Chilean Society of Dietetics, Nutrition, and Toxicology was held recently in Santiago. A number of foreign delegates added to the importance of the occasion. Argentina was represented by Professor Cels, the United States by Prof. Phillip White, Cuba by Professor Lagomarsino, Brazil by Dr. Taveira, Uruguay by Dr. De Mello, and Peru by Professor Urguiete. Among the topics under discussion were "Protection of Foodstuffs," "Problems of Dietetics," "Presentation and Preparation of Food," and "Training of Personnel for the Science of Nutrition."

Fourth Sanitary Meeting Between Chile, Peru, and Bolivia.—The fourth meeting of the control committee of the Sanitary Convention of Chile, Peru, and Bolivia was held in Arica, Chile, on July 1 and 2. Its purpose was to appraise the results of activities during 1952 and to plan the program for the coming year. This meeting had a special importance this year, as it was found necessary to modify and amplify the agreement between these countries in the light of recent conceptions of international sanitation. In addition to the ministers of public health, the directors of the health service of the three countries (Chile, Dr. E. Suarez, Peru, Dr. L. Saenz, and Bolivia, Dr. J. Aramayo) were present. The points of agreement concerned intensification and amplification of the antimalarial campaign, establishment of a goal of vaccination of 80% of the population against smallpox, the control and treatment of venereal disease in the border regions, investigation of the prevalence of trypanosomiasis (Chagas' disease) and means of controlling its vectors, investigation of intestinal parasitic infestations and their treatment, adoption of the yellow fever control measures set forth in International Sanitary Regulation No. 2 of the World Health Organization, and the establishment of sanitary border posts between the three countries.

Hematological, Immunological, and Hemostatic Changes in Cirrhosis of the Liver.—Drs. C. Meza and H. Orrego reported on 82 patients with cirrhosis of the liver in *Revista Medica de Chile* for May, 1953. The cirrhosis was classified as serious or mild. The serious cases were those in which there was ascites, esophageal varices, lethargy, or coma. Of the 82 cases, 61 were considered serious. They found anemia in 61 of the patients (macrocytic in 36, normocytic in 21, and microcytic in 4). All of those with microcytic anemia had severe hemorrhages. The authors noted that the severe anemias were always associated with advanced cirrhosis but that some patients with advanced cirrhosis had a normal erythrocyte count. There was, however, a relation between the degree of anemia and the quantity of serum albumin. The leukocyte count varied between 2,000 and 45,000. In 40 patients the count was normal, in 27 there was leukocytosis, and in 15 there was leukopenia. Marked leukocytosis or leukopenia was associated with the serious cases of cirrhosis. Except in patients whose leukocytosis was due to infection or hemorrhage, a count of more than 20,000 white blood cells was found only in the patients in coma. In the neutrophils deviation to the left was frequently observed. Pathological granulations of the neutrophils were present in 51 of the patients. The absence of eosinophils was a bad prognostic sign. There was a correlation between the lymphopenia and the severity of the clinical findings. Autoagglutinins and isoagglutinins were studied in 18 patients, in 13 of whom the presence of agglutinins was detected. A decrease of the prothrombin activity of the plasma was found in all of the 15 patients in this part of the study, a decrease of the fibrinogen in 12, poor retraction of the clot in 8, prolonged bleeding time in 8, increased coagulation time in 7, and increased fibrinolytic activity of the plasma in 4.

COLOMBIA

Toxoplasmosis.—In March, 1953, Drs. A. Laverde L. and J. Arciniegas Castilla reported in *Anales de la Sociedad de Biologia de Bogotá* the second case of congenital toxoplasmosis observed in Colombia. The first case was reported in October, 1950, by Drs. M. Roca García, J. Camacho Gamba, and G. Esguerra Gómez. The subject of the present report is a child, 7 months of age, the second son of an American father and a Colombian mother. The child was born in Bogotá at full term and was apparently normal during the first few months of its life except for a tendency toward eczematoid dermatitis and diarrhea when given cow's milk. From the age of 6 months, he had strabismus of the left eye, which was accentuated with nearsightedness. A clinical examination showed that the right half of the cranium was smaller than the left half. The ophthalmoscopic examination showed, in

The items in these letters are contributed by regular correspondents in the various foreign countries.

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the left eye, an ovoid, macular plaque of chorioretinitis, of 2 papillary diameters. There was convergent strabismus of 25 degrees in the left side. Roentgenograms of the skull showed small calcifications. They were irregular and observable in the region of the frontal lobes and in the cerebellar region. The sphenoidal cleft of the left side was larger than that of the right side. The Sabin and Feldman reactions were positive for the mother (1:1,024) and for the child (1:4,096) and negative for the father. The infant is living and apparently is in good health.

Trypanosomiasis.—H. Ucros and C. Gerlein, on Sept. 5, 1952, before the Society of Biology of Colombia reported their observations on 128 reactions of deviation of the complement, which were made according to Kelser's technique for the American Trypanosoma. The authors obtained 91% positive results in animals that had been inoculated with a strain of T. cruzi and 100% negative results in the controls. The cultures prepared with material from the same animals showed 90% of positive results, which proves the value of making cultures with material of patients with trypanosomiasis (Chagas' disease). The reactions of 86 samples of human blood serums of patients with different diseases were as follows: positive in 65.7% of 35 patients with mucocutaneous leishmaniosis and positive in 82.6% of the cases of buco-pharyngeal leishmaniosis and in 41% of the cases with only cutaneous lesions. In 35 samples of blood serums from 12 patients with malaria, 10 with syphilis, 8 with amebiasis and 5 with cancer, the reactions were negative in all cases. In 16 samples of blood serums of persons with various diseases, including three with a verified diagnosis of T. ariari, the reactions were negative in all cases, which shows the specificity of the test.

National Meeting of Obstetricians and Gynecologists.—The First National Meeting of Colombian Obstetricians and Gynecologists was held in Bogotá, Sept. 9 to 12, under the chairmanship of Dr. A. Aparicio Jaramillo. Drs. C. R. Silva Mojica and F. Tamayo were vice president and general secretary, respectively. Headquarters were at the Tequendama Hotel, and the surgical sessions were held in the San José Hospital. More than 240 specialists attended the meeting. The question of whether purely medical or purely obstetrical treatment was preferable for the toxicoses of pregnancy and the importance of prevention was discussed.

A paper on the Rh factor brought out the fact that the Rh factor should always be determined in women who are to receive blood transfusions, in order to establish the compatibility of the donor blood and to prevent the stimulation of anti-Rh substances in the patient's blood. In Rh-negative pregnant women who have an Rh-positive husband, the presence of anti-Rh agglutinins should always be determined so that emergency treatment can be made available in advance. A careful clinical and hematological examination should always be made on infants born to an Rh-negative mother, even if isoimmunization is not demonstrable in the mother. The practice of inducing premature delivery in Rh-negative mothers is no longer advocated.

Another paper told of the establishment of clinics for consultation on sterility in Bogotá, Medellín, and Bucaramanga. The number of these important clinics should be enlarged in many other gynecologic centers of the country. When married couples report for examination because of sterility, it was recommended that the first examinations should be made on the husband.

National Congress of Gastroenterology.—The Fifth National Congress of Gastroenterology was held in Cali City, Sept. 9 to 13, under the chairmanship of Dr. H. Anzola Cubedes. Drs. C. Camacho and J. Lega were vice presidents; W. Elasmar B, general secretary; and F. Rojas Turriago, treasurer. Headquarters were at the Aristi Hotel and the surgical sessions were held in the San Juan de Dios Hospital. More than 120 delegates were present. In addition to the presentation of many valuable papers, demonstration courses on endoscopy and radiology were given in the San Juan de Dios Hospital and the Clínica de Occidente.

ITALY

Progress in Treatment of Blood Diseases.—Professor Baserga read a paper on the treatment of blood diseases before the medicosurgical society of Verona on March 21, 1953. He asserted that anemia can and should always be cured, and he adhered to the classical distinction of hypochromic, hyperchromic, and normochromic anemia. In hypochromic anemia, determination of the amount of iron in the blood plays a great role in successful treatment.

Administration of iron to patients with hypochromic anemia should be based on the following fundamental points: 1. Intravenous administration of iron should be carried out only in patients in whom the diagnosis of hypochromic anemia is certain. 2. The total dose of iron to be administered should always be previously calculated. Iron administered orally is absorbed by the intestinal mucosa only if the patient lacks it, whereas the iron that is administered intravenously accumulates in the organs when the amount given is greater than what is needed to restore the hemoglobin level to normal. From this arises the danger of hemosiderosis when intravenous therapy is not indicated or when it is carried out improperly.

Discussing hyperchromic anemia, Professor Baserga said that today pernicious anemia is always cured with liver extracts and vitamin B_{12}. Cases have been reported in the literature in which there was sensitivity to folic acid and resistance to vitamin B_{12} or cases of sensitivity to liver and resistance to vitamin B_{12}, but they are rare. Therefore the therapeutic problem of pernicious anemia can be considered practically solved. On the other hand, the diagnostic problem is still difficult.

The use of tonic preparations containing vitamin B_{12} leads to the situation that almost all anemic patients are given large doses of the vitamin before an exact diagnosis is established. Because of this, the clinical and hematological picture of pernicious anemia is greatly altered and dissipated, while at the same time the neurological syndrome is not prevented. The physician should therefore learn to know the picture of disguised pernicious anemia. He should give great importance to the neurological examination because the most interesting clinical sign is the disappearance of the vibratory sensibility of the lower extremities.

Normochromic anemia is the most difficult to treat. Some authors say that it does not exist and that only in rare cases is hypochromic anemia due to lack of iron and deficient bone marrow function. However, in relation to the small amount of marrow present, the quantity of iron is sufficient. Often this is the complex picture seen in aplastic anemias that can develop into leukemia and agranulocytosis if the patient is kept alive by blood transfusions or other forms of treatment.

At this point Professor Baserga drew attention to the concept that he has supported for many years that in most cases of aplastic medullar reactions the following factors are present: an almost empty bone marrow, absence of peripheral anemia, and agranulocytosis. Often in the long run there is also aplastic anemia.

The question arises as to what therapeutic possibilities exist for this syndrome, which includes true aplastic myelosis, progressive myeloid atrophy, and aplasia caused by drugs. The speaker said that treatment of agranulocytosis consists mainly of repeated blood transfusions, and he spoke of the use of cortisone and corticotropin in hematology. He explained their mechanism of action, which is of an antibody and cytostatic nature and produces a general improvement that has not been well accounted for. The two hormones have mainly an antiallergic activity; this explains their pronounced therapeutic activity in all conditions that have some allergic aspects, such as agranulocytosis, acquired acute hemolytic jaundice, and acute thrombocytopenia.

Reviewing the literature on cortisone and corticotropin, he indicated the reasons that may make one product preferable to the other, the complications that may arise from their use in therapy, and the means to prevent or attenuate these dangers. He discussed treatment of hyperdysplastic diseases of the leukocyte, such as leukemia, lymphogranuloma, and

lymphoblastoma. He explained the modern concepts about the pathogenesis of these conditions and listed the various aplasia-inducing agents like x-rays, radioactive phosphorus, arsenic, urethan, mustard gas, and corticotropin. Radiological therapy and careful symptomatic therapy have great importance in the treatment of chronic leukemia and lymphogranuloma.

Professor Baserga concluded that the treatment of anemia has already achieved its goal. In leukemic forms it is, however, only possible to prolong the life of the patient. Therefore the physician's first duty is to use all the therapeutic means that can improve the condition of the patient and prolong his life until science finds more effective remedies.

Convention on Tuberculosis.—The 33rd convention of the Swiss Association Against Tuberculosis was held in Zurich April 25, 1953. Many Italians participated. Professor Daddi, director, University of Milan Institute of Phthisiology, said that there may be in the same person streptomycin-resistant strains of bacilli in the tuberculous cavities while there are streptomycin-sensitive strains of bacilli in other areas of the organism. This was repeatedly proved in his clinic, and he is therefore convinced that therapy with this antibiotic should be continued even in those patients whose sputums contain strains of streptomycin-resistant bacilli. In fact, he obtained excellent results in many such patients.

Professor Baroni, director of the Sondalo sanatorium, reported the results of studies on isoniazid that are still in progress in the sanatorium laboratories. The capacity of the organism to break down and eliminate the drug varied among the various groups of patients. As a rule, the efficacy of the chemotherapeutic product is greater in the patients who break it down with lesser intensity.

Professor Garattini, from the University of Milan Institute of Pharmacology, advanced hypotheses that tend to reconcile the laboratory data, which contraindicate the combination of isoniazid with streptomycin and *p*-aminosalicylic acid, with the clinical data, which definitely favor such a combination. He discussed also the particular character of the resistance to isoniazid. Resistance to the drug is entirely specific. Therefore, new products that have marked structural analogies with isoniazid can be very active on isoniazid-resistant germs. This suggests new possibilities for the solution of the problem of tubercle bacilli resistance to the newest of the specific antibiotics.

Terminal Nerve Corpuscles in Walls of Arteries and Veins.—Professors Bertelli and Rugani discussed terminal nerve corpuscles of the vascular walls at a meeting of the Physiocritics Academy of Siena on April 29, 1953. Bertelli reported the results of studies made to establish the topography and morphology of the terminal nerve corpuscles situated in the wall of the popliteal artery and near it and to ascertain whether they are also present in the wall of the homonymous vein and near it. He performed serial microscopic sections of the popliteal vascular bundle that he had removed in all its extension and with much perivasal connective tissue from three men, aged 16, 40, and 56. He found that the corpuscles are rarely present in the adventitia of the popliteal vessels, their number being limited to one or two in the artery and vein of each person. There is a conspicuous number of them, however, in the lateral and medial angle where the popliteal vessels come in contact. There are other corpuscles in various points along the walls of the vessels, in contact with the adventitia as well as removed from the vessels, near the muscle bundles and the fibrous septa that from these proceed toward the adventitia of the two major popliteal vessels. He studied also the external form of the corpuscles and their complexity. These corpuscles belong to the category of specific and nonspecific corpuscles of Vater-Pacini. His studies are still in progress.

Professor Rugani discussed the terminal nerve corpuscles that are in contact with the walls of the femoral vessels and near them. He observed incapsulated nerve endings, mainly of the Vater-Pacini type, near the femoral vessels or in contact with them. The vessels had been removed from one side only in three men together with the surrounding adipose tissue, and many serial sections had been made. He gave exact information on the numerical topographic rate of the terminal nerve corpuscles with respect to the arterial and venous walls. He pointed out their interesting distribution in the common femoral artery and demonstrated the relation of some corpuscles with both the walls of the vessels and the arteriovenous anastomoses.

LONDON

Common Cold Virus.—After seven years' intensive investigation at the Medical Research Council's common cold research unit at Harvard Hospital, Salisbury, Dr. C. H. Andrewes and his staff have succeeded in propagating the common cold virus serially in cultures of embryonic human lung. In a preliminary communication in the *Lancet* (Sept. 12, 1953, page 546), they give details of their methods and their preliminary results. Cultures of human lung tissue were prepared from embryos up to 16 weeks of age. Five tissue explants were placed in each plasma-lined tube and 1 ml. of nutrient fluid was added. The nutrient material consisted of 90% bovine amniotic fluid (Seitz-filtered), 5% bovine embryo extract, and 5% normal horse serum. Penicillin, streptomycin, and phenol red were added to a final concentration of 100 units, 0.1 ml., and 0.002 mg., respectively. In later experiments, soy bean trypsin inhibitor was added to a concentration of 0.1 mg. per milliliter. The tubes were inoculated at 37 C in a drum revolving 14 times an hour. All cultures used for passage were at least three days old.

A series of passages was initiated by the inoculation of unfiltered nasal washings from a person with a typical afebrile cold. The material so obtained produced 13 colds in 130 volunteers, an incidence of 10%, where as parallel cultures not inoculated with infected material gave rise to no colds in 61 volunteers. Colds were produced by cultures up to and including the 10th serial culture; by that time the original virus had survived 35 days at 37 C and had undergone a 10^5 dilution. Culture materials were further diluted 1:5 before testing. There is thus "good evidence" that the infective agent has multiplied in culture. Dr. Andrewes sums up the position by stating: "Propagation of the common-cold virus in culture will give results of little practical value so long as growths of the virus can be proved only by tests on volunteers. We have every hope, however, that its presence will be demonstrated in other ways. Cytopathogenic effects on cultures have not yet been seen but most observations have hitherto been of roller-tube cultures with low-power objectives. There has not yet been time to apply to the problem various methods of microscopy and electron microscopy nor many available microbiological techniques. With demonstration of activity of the virus in cultures by any of these methods, study of the common cold would enter a new phase."

Field Work of a Diabetic Clinic.—"The need for field work in the care and aftercare of the diabetic patient becomes apparent the longer one works in a central clinic. It is doubtful whether the family doctor can find time to undertake all this work. Teaching the diabetic has to be slow, painstaking, and above all consistent. It is not always possible to have consistency in treatment with different schools of thought, neither of which are wrong but confusing to the patient. This work can be done by a woman of the right personality who must have considerable tact as well as expert knowledge. As she is based on the clinic, the patients recognise her as part of the authorised service and they do not consider her an intruder. Her reports to the clinic and to the patient's own doctor help to keep everyone informed of the situation. This work is better done by a specialist health visitor, as mistakes in management of the diabetic may readily occur where anyone lacks the experience which may be obtained only after working with the disease in all its vagaries." This is the opinion of Dr. Joan B. Walker, medical officer in charge of the diabetic department, Leicester Royal Infirmary, gained from experience in the County of Leicester that has a population of around 350,000 (*Lancet* **2**:445, 1953). After con-

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sulting the local authority, hospital management committee, and the general practitioners' committee, a specialist health visitor for diabetic work was appointed. She attends the diabetic clinics and sees every new patient with the physician in charge. A full report is sent to the patient's physician, and arrangements are made by the health visitor for the district nurse to supervise the administration of insulin until the patient or a relative is capable of giving it unaided. During the first, second, or third day, the health visitor visits the patient with the district nurse, investigates the home conditions, and discusses any outstanding problems. A second visit is paid, after the patient has been to the clinic a second time, and the health visitor demonstrates how to test the urine and also checks the patient's diet and insulin dosage. On the third visit, the health visitor watches the patient test his own urine. Subsequent visits are made as required or at the request of the family physician or the clinic. Special attention is paid to the care of the feet in the elderly and those with peripheral vascular disease and to the assistance of patients with failing vision. The health visitor is able to give advice on such problems as provision of home helps, ambulance facilities, or applications for national assistance benefit.

Examples are given of the value of the work that such a health visitor performs. She is able to assist mothers in taking over the care of their diabetic children without any difficulty or unnecessary worry, and she visits schools attended by diabetic children so that she can explain hypoglycemia to the teachers and discuss the diet with the school cook. Most of the diabetic children take the school dinner without any modification. At the difficult stage of leaving school and beginning work, the health visitor can make sure that the person chooses suitable employment, visits the personnel manager, and discusses any dietetic problems with the canteen supervisor. Shift work is common in Leicester, and at one time it was considered advisable to keep diabetics from such work. This caused an inevitable detrimental effect on pay and promotion. With the aid of the health visitor, it has been possible to overcome this difficulty either by discussions with the employer or by advice given to the diabetic in how to adjust his diet and insulin intake to fit the shifts. Much useful work has been done in reducing the necessity for senile diabetics to visit the clinic and in supervising the tuberculous diabetic undergoing domiciliary treatment for tuberculosis. An interesting example is also quoted of how the health visitor can prove useful in an emergency. A batch of protamine zinc insulin was found to be faulty. On being notified, the manufacturers immediately recalled the whole batch, but in some rural areas the recall was difficult. At each home visit the health visitor checked the batch number of all the insulin vials in the house and found 29 patients who were using the faulty batch; 20 had experienced nocturnal thirst and polyuria, 18 loss of weight, 3 ketosis, 2 intercurrent infection, and 5 hypoglycemia. All responded immediately when given other insulin.

General Practitioner Research.—"Research Newsletter No. 1" of the College of General Practitioners (*The Practitioner*, Sept., 1953, page 307) reports that the college has established a research committee and opened a research register. The objects of the committee are "to assist general practitioners in work undertaken in their own practices, either single-handed or in study groups." In addition, help will be given, if requested, to existing research organizations in the collection of material. Although the most important part of this work of the college will be the encouragement of general practitioners to undertake research in those aspects of practice that interest them most, the college will also initiate investigations and form college research groups to work on other problems. No attempt will be made to compete with existing research organizations and work will not be initiated by the college that can be better done by others.

There are already many names of physicians on the research register of the college, and a directory has been prepared that contains the names and addresses of all members and associates on the register. With the name of each is entered the particular research interest expressed by him in his original application, and it is hoped that the directory will serve as a means of introducing physicians who have similar interests. "In this way, exchange of ideas and information may be effected, and study groups may be formed which can investigate problems of their own."

From an analysis of these entries "it is clear that there are three types of research-minded general practitioners." The first is the man who prefers to work alone and who may have a definite object in view, that is, an M. D. thesis. He may need advice on the value of his undertaking, on colleagues who are working on similar problems, and on the suitability of his work for publication. In all of these ways the college can help him, "It may put the 'one-line' worker who has exhausted all the clinical material in his practice in touch with a colleague who can provide him with more." The second type has interests in some wider field. When it is known that others share these interests, the next logical step is the formation of study groups within the membership of the register. The hope is expressed that "study-groups will form themselves in this way, introduced and helped by the College, but in no sense controlled by it." The third kind is willing to collect information to be analyzed by a central organization.

To advise it on all research problems the college has established a research advisory panel consisting of experts in a wide field of scientific and medical experience.

Smoke and Cancer.—In his presidential address to the chemical section of the British Medical Association, Prof. G. R. Clemo, director of the chemistry department, King's College, Newcastle-upon-Tyne, reported that analysis of smoke collected in Newcastle had revealed the presence of considerable amounts of a material that proved to be a derivative of pyrene and that gave highly characteristic derivatives resembling those of a well-known carcinogen. The possible relevance of this finding to the cause of cancer of the lung could not be ignored.

Aid to Antivivisectionists.—The curiously muddled thinking that characterizes many well-meaning members of the public on the subject of vivisection has once more come up. In an address to the zoological section of the British Medical Association, Dr. W. Lane-Petter, director of the Laboratory Animals Bureau of the Medical Research Council, drew attention to the fact that certain branches of research, teaching in particular, were seriously handicapped by the difficulty in obtaining sufficient numbers of dogs and cats. He pointed out that, if even a fraction of the dogs and cats that are destroyed annually were made available for research purposes, this problem would be solved. "If reputable public bodies were to assist the laboratories in this humane task the private dealer would go out of business, medical research would be the richer in time, money, and, above all, opportunity, and human and animal suffering would be substantially reduced." This admirably humane solution to a problem that is assuming increasingly serious proportions has produced an outburst from one of the "reputable public bodies" to which Dr. Lane-Petter referred, the Royal Society for the Prevention of Cruelty to Animals. Full justice can only be done by direct quotation: "On this matter of using stray dogs for experimental purposes, we can admit no compromise; and any attempt to alter the existing regulations which forbid such a practice, will be faced with resolute opposition by the R. S. P. C. A. We consider that the mere fact that a dog has become a stray means that he has suffered; and to change the law here, as has been done in the United States, would be a step of the most retrograde kind. Furthermore, the society could not break faith with the public who hand their dogs, cats, and other pets to us in order that we may give them a painless end."

Saccharin.—Having been informed by the Medical Research Council that certain artificial sweeteners are "undesirable for reasons of health," the Minister of Food has issued the Artificial Sweeteners in Food Orders, 1953, that prohibit the use of all artificial sweetening substances except saccharin in food.

CORRESPONDENCE

HYDROCORTISONE AND RESISTANCE OF TISSUE TO INJURY

To the Editor.—The Selye article that appeared in THE JOURNAL (**152:**1207 [July 25] 1953) is directed against the thesis that the glucocorticoids provide some "protective shield" around the tissues of the body. Experimental work is quoted from which a hypothesis, stating that "inflammation and necrosis are two related, but fundamentally opposed, types of reactions to nonspecific tissue injury," is derived. The key word in this hypothesis is "opposed." Temporally the two reactions are closely related; morphologically they may be separated. To place a teleological framework on the occurrence of necrosis and inflammation is to prolong the now defunct debate on the usefulness or harmfulness of inflammatory phenomena. It is necessary to recognize the importance of this class of recently defined hormones (cortisone and corticotropin) in general body reactions to injuries of various sorts. Partial insight as to how these hormones function on the local tissue level has been forthcoming in recent years (*Ann. N. Y. Acad. Sc.* **56:**623, 1953). At the present time the greater part of the hormones' effect, on the local inflammatory reaction, seems to be in reduction and slowing up of inflammatory cellular and serum (?) phenomena. These hormones slow up the infiltration and reduce the number of inflammatory cells, particularly lymphocytes, allow for production of poor granulation tissue, and possibly reduce active antibody production. Their actual role then in local disease processes would seem to be in the nature of a controlling mechanism in these pathological tissue processes. The inhibition of inflammation would per se permit any sufficiently strong irritant to spread throughout the tissues and to produce necrosis. That subcutaneous or other tissues produce some granulation tissue and cellular barrier, even in the face of excessive hormones, is to be noted. Pathologists consider the importance of necrosis to cellular infiltration under the general heading of inflammation for discussion purposes. It is clearly understood that necrosis of portions of an organ may occur with little evidence of large amounts of inflammatory cell infiltration into the central portion of the necrotic site; an example is caseous necrosis of lymph nodes in various infectious diseases. Any necrosis of visibly measurable amount, however, if it exists within the body for a period of time, will produce cellular infiltration and circumscription. Indeed, the rule is necrosis to inflammatory cell exudate into the site. That the hormones under discussion have given us a slow motion picture of the forepart of this phenomenon, does not mean necessarily that the reactions occur separately. Has an experiment been devised that clearly proves that prolonged necrosis can occur without any inflammatory cell alterations?

The existence of other basic and important substances in necrosis and inflammation is generally recognized. Precisely how these interrelate with cortisone in the general phenomenon of inflammation has not yet been defined. That the importance of these local substances has been overemphasized and too many generalizations drawn from the limited experiments that first described them, is now generally conceded.

It is unfortunate that the article by Selye considers inflammation and necrosis as fundamentally opposed types of reactions. Necrosis, produced by whatever means, is but one in a long series of cellular changes that results in healing, provided the animal survives. The use of words such as phlogistic and antiphlogistic, while toxonomically sound enough, is to be deplored. Acceptance of the notion of the action of corticotropic hormones being a shield-like buffer against various irritants, while proposed at an earlier date, has by now been generally discarded.

An analysis of the article shows the following points. 1. Is the clinical assumption that glucocorticoid action is to provide a "protective shield" around the tissues of the body against pathogens correct? Answer: (*a*) Total lack of data to prove, in the area of those hormones greatest clinical usefulness, that pathogens are the responsible agent makes the protective shield notion unnecessary. (*b*) There is no experimental evidence for the existence of such a "barrier." 2. Is the statement that experiments are offered in evidence that these hormones can both protect and sensitize to injurious agents a sound one? Answer: (*a*) No evidence is offered for either sensitization, in the usual sense of the word, or hormonal protection, as such. 3. ". . . suppression of inflammation by glucocorticoids is virtually synonymous with the suppression of . . . disease phenomena. . . ." Answer: (*a*) Necrosis is increased, how can it be stated that disease phenomena are suppressed? 4. These experiments showed the production of a mild inflammatory response that protected the body against a subsequent severer injury. The severer (within limits) the primary injury the greater the protection. Answer: This general phenomenon and its modification by cortisone is generally recognized, it is not necessarily dependent entirely on cortisone for modification. 5. "It is not the inflammation that is 'necrotizing' but those histotoxic agents. . . ." Answer: This is not a clear statement, and in any case it does not consider local necrotizing agents produced by damaged tissues. 6. The histological pictures of cortisone-modified granulation tissue are similar to those produced by other workers.

It may be pointed out that the experimental work of Selye is similar to that of previous investigations. I do not take exception to the methods or techniques of the experiments but rather to the generalizations in the article. I take issue with certain terms, and it seems to me that the quantitative differences in tissue reactions produced experimentally are not sufficient grounds to call forth an attack on fundamental theses. An understanding of different enzyme and hormonal influences upon the phenomena of inflammation to necrosis to healing has progressed steadily during the last 100 years. The recorded work on cortisone effects in this area fit into the general pattern of previous tissue understanding.

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TREATMENT FOR VARICOSE VEINS

To the Editor:—A recent paper by Biegeleisen in the April 15, 1953, issue of the *New York State Journal of Medicine* describes that author's experience in the treatment of varicose veins. This report was abstracted in the Aug. 15, 1953, issue of THE JOURNAL. The author states that "in the absence of proved permanency of cure by surgical means, injection treatment remains the treatment of choice in most cases." This statement is in direct conflict with the reports from leading medical centers throughout the country and, therefore, deserves careful analysis.

Recent experimental and clinical investigations have demonstrated that injection therapy is not an effective method of treatment for varicose veins. It is impossible to localize accurately the effects of a sclerosing solution. Even in expert hands, injections may produce allergic reactions, skin sloughs, and deep phlebitis. Kinmonth and Boyd state that histological studies of veins injected with sclerosants indicate that valves may be damaged by doses that are too small to even produce obliteration of the vein. Hanschell feels that varicose veins thrombosed apparently solidly by sclerosants seldom fail to be recanalized completely. "If injected veins with or without concurrent ligation had been followed for periods over 10 months, injections would long ago have been abandoned as useless." Prioleau states that injections should be reserved only for the obliteration of small unsightly varicosities. Garber also concludes that the benefit, if any, derived from sclerosant solutions is at best of a temporary nature.

The ideal method of treatment for varicose veins should include the following features: (1) Elimination of all venous

incompetency at its source by ligation of all varices at their junction with the deep veins; (2) extirpation of the remaining varicose vein segments so that few, if any, postoperative injections are necessary; (3) making of few incisions so that the operating time is short and the cosmetic result good, and (4) local anesthesia and mobilization of patient almost immediately postoperatively. These criteria are best met by a proper high ligation of the long saphenous vein, followed immediately by a complete stripping procedure. Total removal of the diseased saphenous system can be performed with local anesthesia on a semiambulatory basis. Postoperative treatments are reduced to a minimum since few, if any, injections are necessary. Not only all incompetent veins are localized preoperatively and effectively eliminated at operation but, by stripping out the saphenous vein, all other communicating branches are cut off and the possibility of incompetency developing at these sites at a future date is minimized. Many patients who have had both operation and injections stated the injections caused more pain and disability than the operation.

Dr. Biegeleisen, in comparing sclerotherapy with surgical treatment, compares his series of patients treated with injections with "62 cases undergoing various types of venosurgery. They included the author's private patients as well as others." Fifty-eight of these 62 patients had high ligations or multiple ligations. On the basis of this group of patients, the author describes a very high incidence of recurrence of varicose veins and of lymphedema following operation. In the first place, a stripping procedure was used in only two patients, and this operation is now generally accepted as the most effective surgical treatment for varicose veins. Second, the operations were performed by several physicians, and their exact technique is not described. Unfortunately, in a significant proportion of cases, the long saphenous vein ligation is not performed high enough (flush with the femoral), and the small branches, which persist, pave the way for the recurrence of varicosities. As far as the incidence of lymphedema is concerned, in a series of 3,300 cases operated upon by Linton, Silbert, Bull, and myself, not one instance of "lymph-leg" has been noted during the past 15 years. This contrasts sharply with the results reported by Biegeleisen. If all active infection in the extremity has been controlled and if the surgeon avoids any enlarged lymph nodes or lymphatic vessels that may be present, there should be no postoperative lymphedema.

The ideal treatment for varicose veins consists of the eradication of all detectable venous insufficiency in the most rapid manner possible, with the least time loss, discomfort, and expense for the patient. Injection treatment is a palliative, not a definitive, method of treatment, and it does not accomplish this objective. After analyzing the literature, communicating with other specialists, and evaluating my own results, it is apparent that this objective is best achieved if a careful high ligation and complete stripping procedure is performed.

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HANSENOSIS FOR LEPROSY

To the Editor:—Recently I received a letter from Mr. Stanley Stein regarding the acceptability of the name Hansen's disease to supplant the word leprosy. Mr. Stein is editor of *The Star*, a magazine published by patients of the U. S. Public Health Service Hospital, Carville, La. I share in the general objection to the use of eponyms in designating diseases. However, I believe a less opprobrious term than leprosy is desirable providing it has taxonomic acceptance.

As is well known, the micro-organism generally accepted as the causative agent of leprosy is an acid-alcohol-fast organism discovered by Hansen, a Norwegian physician, in 1868. The biological characteristics of this organism require its classification under the family Mycobacteriaceae, where it is correctly placed under the genus Mycobacterium (Breed, R. S.; Murray, E. G. D., and Hitchens, A. P.: Bergey's Manual of Determinative Bacteriology, ed. 6, Baltimore, Williams & Wilkins Company, 1948, pp. 876-891). To this, there can be no rational objection. The objectionable feature, and the obstacle that must be surmounted in considering a change in nomenclature, is the name of the species, which is leprae. As a way around this difficulty, the name of the species might be changed from leprae to hansenii (in honor of Hansen who discovered the organism). The name of the organism, then, might become officially Mycobacterium hansenii. The disease produced by this organism could then properly be designated hansenosis. This would, I believe, be correct in a taxonomic sense and would meet the objections of those who, for eponymic reasons, dislike the name Hansen's disease.

I do not consider what is written here to be authoritative. I am not a bacteriologist and probably should not encroach on the field of those who are. My views are given as suggestions and probably have occurred to others. They are offered in further exploration of a problem that is of concern to many persons. Those who seek more information regarding the origin of the term leprosy may consult the article by Lendrum (*Am. J. Trop. Med.* [Nov.] 1952), who considers the word leprosy a barrier to sound medical care and a historical misnomer.

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STAIN FOR LIPID BODIES

To the Editor:—The article "Stain for Lipid Bodies in Urinary Sediment" (*J. A. M. A.* **152:**1713 [Aug. 29] 1953) leaves with the reader the definite impression that (*a*) the staining of urinary sediments, although until recently not widely utilized, is now being widely utilized and (*b*) that the authors have proposed a new method for staining urinary sediments in order to reveal lipid bodies. It would be difficult indeed to know how widely staining methods for urinary sediments are employed, but it is likely that such methods are seldom used even today. The reference to this matter cited is by no means the only one, for there have been many, including one by Behre and Muhlberg (*J. Lab. & Clin. Med.* **22:**853, 1937). The reason staining methods are not widely employed is that experienced observers do not find them necessary or advantageous except under unusual conditions. With regard to the method of staining sediments with Sudan 3, which the authors give in detail, this method is one of the oldest, and there is nothing new about the method proposed by the authors.

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PHYSICAL ROLE OF PLATELETS

To the Editor:—Between the covers of THE JOURNAL two references to hemostatic mechanisms have recently appeared (Transfusion of Platelets, editorial [Aug. 8] p. 1434, and Pfizer's Spectrum [Aug. 29] adv. p. 28). Both of these omit the mechanical role of the blood platelets in arresting hemorrhage. This fundamental role of the platelets is frequently overlooked by chemists studying coagulation, but I do not understand how it can be consistently overlooked by physicians and physiologists with a comprehensive point of view.

Independent observation by Hayem and by Bizzozero in the 1880's established that blood platelets clump together and fill in the gaps in cut blood vessel walls. Apitz, Zucker, and Hugues have made direct observations of this process in mammals in recent years, and my study of biopsy material showed that man is like other mammals in this respect. When a muscular vessel is opened, a sizeable platelet mass forms at the site of injury within two minutes. As this plug forms, it is, at first, leaky and rivulets of blood can be seen spurting through it; possibly the fibrin mechanism is responsible for making this platelet seal waterproof (bloodproof). In some instances the platelet plug may be washed away several times, by the force of the bleeding, before it finally becomes fixed. One might suppose that fibrin is involved in this fixing too. In any case, the long-observed fact is that platelets, not fibrin needles, are the normal sealers of muscular blood vessels. The fact that platelets also contain and release chemical factors involved in hemostasis and clotting is not debated. That fact should not blind us to the platelets' basic role as morphological entities.

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COUNCIL ON MEDICAL SERVICE

SUMMARY OF A STUDY OF MULTIPLE SCREENING

The Council on Medical Service has completed a study of 22 multiphasic screening programs carried on in various parts of the United States. The study report is being published in lithographed form for those particularly interested in multiple screening. The following paragraphs contain a summary of the study report. No effort has been made to evaluate these programs at this time; rather the Council has tried to report the opinions and ideas of physicians familiar with multiple screening and let the readers make their own decisions.—ED.

The Council on Medical Service has investigated the subject of multiple (multiphasic) screening and has published this study for distribution to those interested in the subject. Because the subject is controversial, because it has some ardent advocates, and because it has equally ardent opponents, the Council desired to explore the subject in as objective a manner as possible, to present what facts are available, and to show all points of view. The Council has obtained its information through reports from the literature, material on file at the Council's office, and direct communication with persons and agencies responsible for the administration of the various multiple screening programs.

Following is a brief résumé of the complete report, which summarizes some of the pertinent data contained in the 22 multiple screening surveys included in the study. Several surveys were not included in the report. Results of some are not ready for publication owing to data not yet collected or coded and inability or delay in obtaining approval for publication. However, the included 22 surveys are a representative sample of multiple screening. They range in number of persons screened from 500 to 500,000 and in types of persons covered from insurance company employees and small industrial plant workers to city and statewide screening surveys of the general public.

MULTIPLE SCREENING DEFINED

During the last five years many multiple screening surveys have been conducted. Much has also been written both for and against such surveys, and some varying concepts have been expressed. Therefore, a definition is needed that embraces the fundamental concept and expresses the consensus of those actively engaged in the administration of multiple screening surveys. The basic definitions agreed upon at the National Conference on Chronic Diseases: Preventive Aspects, held in Chicago March 12 to 14, 1951, led to the following formulation. This definition is consistent with the concept of multiple screening as expressed in the surveys studied. Multiple (multiphasic) screening is the use of two or more simple laboratory tests, examinations, or procedures, applied rapidly and on a mass basis, to determine presumptive evidence of unrecognized or incipient disease or defect. It has been repeatedly emphasized that screening should in no way be confused with diagnosis. It is merely a step toward diagnosis and a method, however imperfect, for determining the persons most needing referral to their physicians for further study, diagnosis, and treatment. By this method large numbers of apparently well persons can be tested and examined by the use of simple laboratory tests or procedures administered for the most part by nonprofessional personnel and checked by physicians. Persons with positive results are then referred to their family doctor.

OBJECTIVES

The objective in nine surveys was health education and a desire to seek out hidden, specific disease in the population screened. Seven sought mainly to evaluate the potentiality of multiple screening and to test the principles involved. Three surveys were primarily interested in an employee health service coverage, and three others sought to accomplish an economy of administration and operation and give better service to the persons screened than would be possible through a single disease casefinding program.

APPROVAL AND SPONSORING AGENCY

Fifteen surveys were officially approved by medical societies, local and/or state, depending on the area covered. In addition, one had indirect medical society approval while another was approved by the physicians of the area concerned. Four of the screening programs were not submitted for medical society approval because the tests were not available to the general public but rather were confined to a particular employee group, one of which was covered by a union health service plan. Almost all of the multiple screening programs that were open to the public were conducted by the state, county, or city health departments with active cooperation from other health agencies, including active participation in six instances by the local medical society.

CLINIC FACILITIES AND OTHER DETAILS

The screening clinics in many instances were set up with a mobile chest x-ray trailer as a basic component; in other instances the facilities of regular clinics were used in off hours; and in others temporary clinics were assembled at schools, stores, churches, vacant rooms at industrial plants, and booths at fairs. The time per person screened varied from 3 minutes to 60 minutes, depending on the number of procedures performed, which ranged from 2 to 15. Those procedures included a chest roentgenogram, serologic test for syphilis, determination of hemoglobin level, determination of the blood sugar level, and determination of the erythrocyte sedimentation rate; measurement of the sugar and albumin content of the urine, blood pressure determination, electrocardiogram, measurement of the height and weight, tests to determine sight and hearing defects, Papanicolaou smear test, hematest (for occult blood in feces), self-screener history, and a physical examination or parts thereof. The examining units staff consisted of a supervisor; various numbers of technicians, nurses, clerks and volunteer workers; and one or more physicians on duty continuously, alternately, or just part-time.

FINANCING AND COST

Sixteen surveys were financed by money and contributed services of the state departments of health, county and/or city health departments, local medical societies, local chapters of the tuberculosis and cancer associations, and other community health agencies. Seven of those 16 were also aided by grants, services, and/or equipment from the United States Public Health service. In three surveys the employer paid the total cost of screening. One was financed by a union and employer health and welfare fund, one by a health service plan with the aid of local health agencies, and one with the patient himself paying part of the cost, the remainder being absorbed by the medical school clinic and other health agencies. The cost per person screened in the 22 surveys (exclusive of follow-ups) ranged from $1.03 to $15.00 per person.

RESULTS

Ten of the 22 surveys were chosen for a table in this review because they provide the most complete data available concerning both results of screening and results of medical follow-ups. That data may be of some value in evaluating the results of multiple screening as it has been applied in actual practice. The table in itself, of course, does not tell the complete story. Several interesting observations and facts concerning those results will serve to indicate more clearly the significance of the figures thereon.

By way of further explanation regarding the table, it should be noted that data contained in the complete report show that 28% of the positive screenees in survey number 4 did not respond to medical follow-up and of the 72% who did respond almost 50% had confirmed diagnoses of serious disease after medical follow-up. In addition, 75% of the confirmed diagnoses were for cardiovascular disease and diabetes, and a pronounced correlation with obesity was observed (43% of the screenees were 20% or more above ideal weight and 10% were over 40% above ideal weight). Of interest, too, in this survey is the discovery that only 19% of those with subsequently confirmed diagnoses were then under a physician's care.

In survey number 14 nearly all of the 583 screenees had one or more positive test results; all were adults over 45 years. In this survey those with positive test results were examined further to the point of diagnosis and then referred to their family physician for follow-up and treatment. Cardiovascular disease and diabetes constituted 75% of the confirmed diagnoses of serious disease.

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Informative replies were received from physicians in 69% of the referred cases in survey number 15. As noted in the table, 1,646, or 63%, of the screenees had positive findings on screening. It was estimated that only about 3% of those referred for a condition did not visit their family physician. In surveys 16 and 17 informative replies from physicians were received on only 50% of the positive screenees who were referred to their physicians for further study, diagnosis, and treatment, while 76% of the referred cases were reported on by personal physicians in survey number 18. When the data were broken down according to disease finally diagnosed and confirmed, it was found that the family physician confirmed the screening test findings in a ratio of one to two in the following conditions: anemia, heart disease, hypertension, diabetes, respiratory tract infection, tuberculosis, and syphilis. In surveys 18 and 19 cardiovascular disease alone accounted for 75% of the confirmed diagnoses of serious disease after follow-up.

Additional data from that given in the table on survey number 22 indicate that the follow-up or report of follow-up for the various conditions screened was made on from 50 to 80%

Results of Multiple Screening Surveys

Survey *	No. of Persons Screened	No. of Procedures Used	No. of Persons With One or More Positive Test Results	No. of Persons With Serious Disease Diagnosed After Medical Follow-Up †	
				Actual Number	Number/ 1000
1.....	651	9	352	135	207
2.....	470,379	3	Data not available	21,564	44
3.....	945	6	174 ‡	36	38
4.....	3,994	12	2,521	848	213
14.....	583	14 plus	1,605 ‡	141	241
15.....	2,620	15 plus	1,646	186	71
16.....	4,536 §	15 plus	2,815	360	79
17.....	1,172	13 plus	704	234	200
18.....	1,004	13 plus	671	218	217
22.....	37,609	9	13,113	2,622	69

* The surveys are numbered according to the alphabetical arrangement by state in complete report.
† Excluding vision, hearing, and weight abnormalities.
‡ Number of positive test results.
§ Number tabulated from total of 5,067 screened.

of the persons referred to their physicians. Persons with confirmed diagnoses of serious disease made up approximately 50% of those coming to follow-up and/or of those coming to follow-up and reported on by their physicians.

SUMMARY ON RESULTS

In summary, then, it is found that the incidence of lack of response to follow-up on the screenee's part ranged from 1% to 50%. Reports on referrals by physicians making diagnoses after medical follow-up were made in from 50% to 80% of cases, and the incidence of confirmed diagnoses of serious disease after medical follow-up was as high as 50% in several surveys.

It seems significant, therefore, as shown in the column to the right in the table, that the actual number of diagnoses after follow-up of serious disease made and confirmed per 1,000 persons screened ranged from 38 to 241. On the basis of surveys in which a differentiation was made, it may well be assumed that the average yield in previously unknown cases was better than 50%.

COMPARISON WITH SINGLE DISEASE CASEFINDING SURVEYS

The final results, after medical follow-up of the multiple screening surveys in new cases of tuberculosis and diabetes found, compare favorably with the results of special casefinding surveys involving those particular diseases. It is apparent, therefore, that the multiple screening programs did not decrease the effectiveness of tuberculosis and diabetes casefinding.

OBJECTIONS

Many objections have been voiced against the use of multiple screening. Some are valid dangers and must be cautioned against, but others seem to be based upon misconception. As it is not the purpose of this report to defend or refute these objections, they shall be listed and judgment as to their validity shall remain with the reader.

1. A medical production line type of examination by machine cannot exclude or detect all incipient disease.
2. Multiple screening could put the physician backstage in the diagnosis of disease.
3. It may engender into the minds of those in whom abnormalities were not found a false sense of security.
4. It may cause undue apprehension and expense for those who are found to have false positive results from screening tests.
5. Multiple screening represents inadequate medical care and as planned and practiced is based on untenable premises.
6. The diagnostic techniques in multiple screening that have been devised as a means to an end are used as an end in themselves.
7. The physician has no opportunity to secure an intimate knowledge of the patient.
8. There is no opportunity for an appraisal of the "negative" group by a physician.
9. Most of the tests that are employed do not possess even an approximately precise value or measure that, on the one hand, may indicate that a finding is within physiological limits, or, on the other hand, is really indicative of a disease process.
10. Multiple screening is an infringement on private practice; it is the "Trojan horse" of socialized medicine.
11. In multiple screening there is need for a tremendous amount of community organization in order to maintain public interest and enthusiasm.
12. Multiple screening programs consume a great deal of the time of key personnel of the health department and cooperating voluntary health agencies.

ADVANTAGES

The stated advantages and comments favorable to multiple screening were not listed categorically in the complete report because they were expressed in the descriptive data of the surveys. However, in an abstract such as this, it becomes necessary to reproduce a listing of some of the most prevalent comments favorable to multiple screening as well as the list of objections.

1. Multiple screening is an excellent preliminary procedure to any form of examination by reducing the cost and time factors, thereby making it possible to extend periodic examinations to significantly larger groups of the population.
2. Screening programs are one of the practical ways of bringing the benefits of early detection to as many persons as possible. They can help sort out persons who are apparently well but who in reality may need medical care.
3. Multiple screening has been demonstrated to be an effective method of health education and its public relations value has great merit.
4. The multiple screening program was an aid to making people health conscious and seemed to stimulate the desire for regular check-ups.
5. Pooling of results of mass survey studies give invaluable information concerning incidence and prevalence of disease in the population.
6. Multiple screening examinations are flexible. They can be adapted or modified to fit specific groups under consideration and resources that are locally available.
7. As a program of prevention, multiple screening has caused a large number of apparently well persons who were not aware that they might have a progressive disease to consult their physician.
8. Multiple screening is an attempt by the medical profession to make more adequate medical care available to more persons through their family physician.
9. Multiple screening clinics are an effective weapon against the proponents of socialized medicine. The program can be controlled by the local medical society.
10. The patient is enabled, through multiple screening, to benefit in a single visit to his physician from the most recent developments in preventive medicine and health supervision.
11. Multiple screening for chronic diseases presents the possibility for a more economic and more productive use of personnel and facilities than is possible with multiple independent casefinding efforts.

MEDICAL MOTION PICTURES

The Treatment of Mental Illness by Topectomy: 16 mm., color, sound, showing time 25 minutes. Produced in 1951 by, and procurable on loan from, New York State Department of Mental Hygiene, Albany, New York.

Some years ago a special project in the treatment of mental diseases was undertaken in New York. This was quite an elaborate project in which the patients were studied, in most cases, by a battery of psychiatrists before and after an objective procedure was carried out. The study is still in progress and the patients operated on four years ago are still under close psychiatric scrutiny. This had involved a great deal of time and a great deal of money. This report-type film concerns the objective procedure that was carried out on these cases. This was also subject to very careful specifications. It involves the removal of a certain amount of cerebral cortex from both sides of a certain part of the brain. The utmost care has to be taken with regard to the location of the surgical extirpation and its extent. This procedure was given the name of topectomy. As it is carried out at only one place under these carefully controlled circumstances, it was thought that it might be of interest to persons at a distance to know just what the objective procedure involved. Psychiatrists who might contemplate such a procedure for a patient might be especially interested in seeing the surgical procedure.

The film appears, by its language and its introduction, to be aimed at a mixed commission of laymen, physicians, and public officials who are supporting the venture. The language is extremely simple and, as far as the medical profession is concerned, redundant. Nevertheless, the surgical procedure can be seen and understood by anyone who happens to be interested. It is not suggested that this be shown to unsuspecting laymen, but rather to especially interested persons and particularly psychiatrists. The photography is satisfactory.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Vitamins: Sale in Food Stores.—The plaintiff, a retail grocer, filed suit to obtain a declaratory judgment determining the proper construction to be placed on the Minnesota Pharmacy Act insofar as it affected the plaintiff's right to sell, at retail, tablets, capsules, or liquids containing vitamins in their original packages as prepared by the manufacturer or distributor, without giving any directions as to their use except such as are given on or in the package in which they are offered for sale. From an adverse judgment the plaintiff appealed to the Supreme Court of Minnesota.

Portions of the Minnesota statute involved in this action are as follows:

"Section 151.15. It shall be unlawful for any person to compound, dispense, vend, or sell at retail, drugs, medicines, chemicals, or poisons in any place other than a pharmacy, except as provided in this chapter. . . .

"Section 151.01 Subdivision 1 . . .

"Subdivision 5. The term 'drug' means all medicinal substances and preparations recognized by the United States pharmacopoeia and national formulary, or any revision thereof, and all substances and preparations intended for external and internal use in the cure, mitigation, treatment, or prevention of disease in man or other animal, and all substances and preparations, other than food, intended to affect the structure or any function of the body of man or other animal.

"Subdivision 6. The term 'medicine' means any remedial agent that has the property of curing, preventing, treating, or mitigating diseases, or that is used for that purpose.

"Section 151.26 . . . nothing in this chapter shall prevent the sale of common household preparations and other drugs, chemicals, and poisons sold exclusively for use for non-medicinal purposes.

"Nothing in this chapter shall apply to or interfere with the manufacture, wholesaling, vending, or retailing of non-habit forming harmless proprietary medicines when labeled in accordance with the requirements of the state or federal food and drug act; nor to the manufacture, wholesaling, vending, or retailing of flavoring extracts, toilet articles, cosmetics, perfumes, spices, and other commonly used household articles of a chemical nature, for use for non-medicinal purposes."

The plaintiff was not registered as a pharmacist or assistant pharmacist, and he did not, in the operation of his food store, employ a phamacist or assistant pharmacist. Each of the boxes, vials, or containers in which the tablets or capsules were offered for sale contains the information required under the Federal Food, Drug, and Cosmetic Act and the regulations issued thereunder and under the laws of the state of Minnesota.

The Minnesota statutory definition of the term "drug" breaks down into three parts or categories, namely, (*a*) medicinal substances and preparations recognized by the United States Pharmacopoeia and National Formulary or any revision thereof; (*b*) substances and preparations intended for external and internal use in the cure, mitigation, treatment, or prevention of disease in man or other animal; and (*c*) substances and preparations, other than food, intended to affect the structure or any function of the body of man or other animal.

The defendants, members of the state board of pharmacy, contended that the products the plaintiff sought to offer for sale are drugs and that they may be sold only in a pharmacy under the personal supervision of a pharmacist or assistant pharmacist.

The plaintiff contended first that the vitamin products that he proposed to sell in his food store constitute food or food products and are not drugs within the meaning of the Minnesota statute. All of the exhibits offered by the plaintiff, the Supreme Court said, contained some of the vitamins recognized by the United States Pharmacopoeia, and most of them contained several of such vitamins in various amounts and combinations. We are convinced, said the court, that the products that the plaintiff wishes to offer for sale come within the first category of the statutory definition of a drug. It is noticeable, the court continued, that the phrase "substances and preparations," as used in the statutory definition of a "drug" given in paragraph (*a*), is qualified by the word "medicinal"; therefore, only those substances or preparations used for medicinal purposes and recognized by the United States Pharmacopoeia are classified as drugs. That vitamins are used internally for the cure, mitigation, treatment, or prevention of disease in man cannot well be subject to serious doubt. Even plaintiff's experts agreed that a vitamin deficiency is or may be a disease and that when vitamins are prescribed for the treatment of such disease they are prescribed as a drug. The evidence sufficiently sustains the finding that the preparations under consideration come within the classification of subdivision (*b*). There is no dispute that vitamins are a part of much of the food necessary to maintain life and permit growth. The question raised by subdivision (*c*) is whether, since vitamins are component parts of food affecting the structure or function of the body of man, they may still be a drug when used to affect the structure or function of the body of man in a way that ordinarily is not true of food. The true test is: Can the preparations now under consideration affect the structure or function of the body of man or other animal in a way not ordinarily affected by the consumption of food? As so tested, said the court, we hold that the preparations again fall within the statutory requirements. These preparations not only are capable of use as food supplements, but may be used for other purposes consistent with the statutory requirement that they affect the structure and function of the body of man in a manner not affected by foods. The opinion of many eminent specialists in the field of medicine and chemistry called by defendants was that the vitamin products

involved are drugs. We conclude, said the Supreme Court, that they meet all the requirements of a drug set forth in the Minnesota statute.

The plaintiff next contended that, even if such products are drugs, they are exempt from the operation of the pharmacy act by reason of the fact that they are common household preparations and are sold exclusively for use for nonmedicinal purposes. The mere fact, said the court, that the products are harmless household remedies does not except the sale of the products from the operation of the statute unless they are also sold exclusively for nonmedicinal purposes. It is clear that the sale of the products here involved is not so limited. The evidence amply sustains the court's findings that they are not sold exclusively for nonmedicinal purposes; as a consequence, they do not come within this exception of the statute.

The plaintiff next contended that the drugs are exempt from the operation of the pharmacy statute by reason of the fact that they are not habit-forming and are harmless proprietary medicines. The evidence will not sustain the plaintiff's contention that all vitamins are harmless. But, even if we hold that the preparations are harmless if taken as directed, said the court, they are not proprietary medicines. While it is difficult to define proprietary medicines exactly, it is much less difficult to determine those preparations that are not proprietary medicines, and that is as far as we need go. Obviously, before a medicine can be classified as a "proprietary" medicine it must be implied that it has been compounded by a manufacturer who prepared the medicine according to some formula of his own. It does not follow that all drugs or medicines compounded by a manufacturer and sold in the original container under the name of the owner who prepared the substance are proprietary medicines. The products now under consideration are simply natural or synthetic vitamins of various kinds and combinations carried or contained in a neutral excipient. Any manufacturer having the requisite skill and equipment could prepare any one of the preparations involved or one of a very similar nature. Under these circumstances, it cannot be said that the product is a proprietary medicine.

Finally, the plaintiff contended that, if the Minneseota pharmacy act restricts to pharmacists the sale of vitamin products offered for sale as dietary supplements, the statute is unconstitutional. The Minnesota constitution provides "No person shall . . . be deprived of . . . property without due process of law." It also provides ". . . The legislature shall pass no local or special law . . . granting to any corporation, association or individual any special or exclusive privilege, immunity or franchise whatever, . . ." The constitutionality of our pharmacy act, said the Supreme Court, has been before this court in several cases and has been sustained in all of them. The act should be sustained if it has a reasonable tendency to protect the public health or welfare. There are many kinds of vitamins, all of which are intended to be taken for different purposes and deficiencies and for alleviation of different physical disabilities. Some are undoubtedly taken to prevent vitamin deficiencies and the physical disabilities that result therefrom. A pharmacist not only is in a better position to know where to procure a pure and genuine article, but also is equipped by training and education to know and advise prospective purchasers what products contain the vitamins they seek in the best combinations. The record shows that many vitamins lose their strength and vitality by exposure to light or adverse temperature. A pharmacist is equipped by training to know how best to preserve the beneficial qualities of these products. It is evident from the record that there is yet much to be learned about vitamins, particularly their mode of action. The legislature has already excepted many products from the operation of the pharmacy law. The time may come when medical research in this field will reach such a state of perfection that the legislature, in its discretion, may see fit likewise to except from the operation of the law preparations containing specified quantities of named vitamins that have been found to be harmless. For the time being, said the Supreme Court, we must be content to hold that pure and concentrated vitamins, natural or synthetic, prepared in the form of capsules, tablets, or liquids and carried either as a single vitamin or in combination with other vitamins in an excipient and so offered for sale to the public come within the definition of a drug in our pharmacy law and are not within any of the present exceptions thereto; as a consequence, they may not be sold or offered for sale in grocery stores. The pharmacy act, as applied to the facts now before us, is not so foreign to the protection of public health that it should be held to violate the constitutional provisions mentioned above.

Accordingly the declaratory judgment holding that vitamins may not be offered for sale in grocery stores was affirmed. *Culver et al. v. Nelson et al., 54 N.W. (2d) 7 (Minnesota 1952).*

BUSINESS PRACTICE

The following material is based on a public relations manual issued by the Public Relations Department of the American Medical Association.—ED.

OFFICE MANAGEMENT

There are two sides to the practice of medicine—the scientific side and the business side. Poor business practices often are at the bottom of patients' complaints about medical care and medical men. These might include: (1) poorly kept, inadequate records; (2) statements sent irregularly, sometimes incorrectly; (3) no follow-up on collections; (4) too much follow-up on collections; (5) unexplained charges; (6) use of unethical collection agencies; and (7) impersonal control of collection methods by untrained office personnel.

The physician who is systematic and business-like in the handling of office affairs of a nonmedical nature eliminates such public relations problems. Too often, business affairs are left to a secretary or are neglected. The physician who is indifferent to business matters soon finds that because he has kept inadequate records he not only is alienating patients but is in difficulty when tax collectors come around.

Medicine must never become a business, but there is a business side to medicine. Efficiency is nothing more than the operation of an office with a minimum of waste effort. Efficiency is good management—and good management is good public relations. To conduct a practice efficiently one must: 1. Have adequate space and facilities to treat all patients. 2. Employ adequate, qualified personnel. 3. Give careful attention to the business operation of the office. It is impossible to give patients satisfactory care unless there is sufficient office space and equipment. Some physicians set their sights too low when entering practice, taking the cheapest office location and trying to manage in cramped quarters with insufficient facilities. This is unwise. Some physicians wear themselves out by working in poorly arranged offices which could be easily redesigned for efficiency. Suggestions of sources of information on office lay-out and design can be secured from the state chapter of the American Institute of Architects.

A busy doctor should not try to do everything for himself. When he is busy, the first thing he neglects is his bookkeeping—a day-to-day task which should not be neglected. A doctor's records are the key to efficient management of his business. Carefully selected, well-trained (and adequately paid) personnel are public relations assets in the doctor's office.

Efficiency in the business operation of the office means that good records are kept, billing done systematically and regularly, and collections followed through. It means that letters are answered promptly, that insurance claims are filled out on receipt, that office bills are paid when due, that tax reports are filed promptly, and that attention is paid to all business details.

Assistance with the business side of medical practice can be obtained from professional management agencies throughout the country who specialize in helping physicians conduct their practices with efficiency, but it is not necessary to sign up for professional management services to adopt a few sound business practices.

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Am. J. Diseases Children, Chicago

86:131-264 (Aug.) 1953

*Effect of Short-Term Administration of Corticotropin in Active Rheumatic Carditis. M. G. Wilson, H. N. Helper, R. Lubschez and others. —p. 131.

Growth and Metabolism in Normal and Thyroid-Ablated Infant Rhesus Monkeys (Macaca Mulatta): III. Growth and Metabolism Following 1-Thyroxine Administration in Thyroid-Ablated Infant Rhesus Monkeys (Macaca Mulatta). D. E. Pickering and D. A. Fisher. —p. 147.

Id.: IV.—Radiosodium (Na^{24}) Space in Normal and Thyroid-Ablated Infant Rhesus Monkeys (Macaca Mulatta). D. E. Pickering, D. A. Fisher and K. G. Scott.—p. 157.

14-Year Report of Facial Growth in Case of Complete Anodontia with Ectodermal Dysplasia. B. G. Sarnat, A. G. Brodie and W. H. Kubacki.—p. 162.

Convulsive Effects of Light Stimulation in Children. R. G. Bickford, D. Daly and H. M. Keith.—p. 170.

Surgical Treatment of Intussusception in Infants: Effect of Added Appendectomy. H. M. Richter Jr. and J. M. Silver.—p. 184.

Endocardial Fibroelastosis: Report of Unusual Case with Impaired Ability to Fabricate Serum Proteins. B. E. Katz and F. H. Adams. —p. 186.

*Congenital Myasthenia Gravis. R. P. Walker.—p. 198.

Diarrhea of Allergic Origin: Review. P. E. Rothman.—p. 201.

Corticotropin in Active Rheumatic Carditis.—Wilson and associates present the results of the administration of corticotropin for 4 to 12 days to 28 patients in whom 32 attacks of active carditis occurred during the years 1949 to 1952. Seven patients who did not receive corticotropin served as controls. Antibiotic therapy was given to control intercurrent infections during the study period. The diet was salt-poor; fluids were limited to from 900 to 1,500 cc. Ascorbic acid was administered in doses of 150 mg. daily. Corticotropin was administered intramuscularly every six hours for an average period of seven days. The daily dosage varied from 1 to 5 mg. per kilogram of body weight. The following diagnostic criteria served to determine the presence of progressive symptoms and signs of active carditis: (*a*) the development of new systolic or diastolic murmurs, friction rub, or gallop rhythm; (*b*) progressive enlargement of cardiac chambers on fluoroscopic examination in the posteroanterior and oblique views at standard degrees of rotation; (*c*) diminishing cardiac reserve, i. e., dyspnea, decreased vital capacity, and enlarged or tender liver; and (*d*) electrocardiographic evidence of myocardial disturbance, i. e., prolongation of P-R interval, A-V dissociation, and T and ST changes. Active carditis was considered terminated when (*a*) there was fluoroscopic evidence of reversal of chamber enlargement and (*b*) new murmurs and friction rub disappeared and there was reestablishment of a normal cardiac reserve and return of the electrocardiogram to normal. Active carditis was considered to have recurred when any of the manifestations mentioned above were again observed. In all patients with active carditis of short duration, the progressive symptoms and signs were arrested during the first few days of corticotropin therapy, regardless of whether the corticotropin dosage was adequate or not. There was a recurrence of active carditis in the majority of patients who received inadequate therapy. Examination of 24 patients with active carditis who received adequate therapy revealed no overt clinical evidence of increased cardiac damage. There was reversal of chamber enlargement in 22 patients. Two patients with carditis of more than 10 days' duration, who did not exhibit progressive cardiac enlargement during the control period, showed no reversal of chamber enlargement. All patients were ambulatory within one to three weeks after therapy was discontinued. The cardiac status was maintained for 3 to 26 months, in the majority for more than 6 months. Of the eight patients who had inadequate therapy, five had a recurrence of active carditis. Three of the latter received a second course of corticotropin in adequate dosage, and, in two, carditis regressed spontaneously. The importance of early treatment is indicated by the failure to obtain reversal of cardiac enlargement in three patients with carditis of longer duration. Administration of corticotropin is followed by arrest and termination of active carditis without overt clinical evidence of residual cardiac damage, provided it is used before irreversible damage is sustained. The natural course of active carditis was favorably altered by decreasing both the severity and the duration of the attack.

Congenital Myasthenia Gravis.—According to Walker myasthenia gravis reaches its peak incidence in the third and fourth decades and is rare in the newborn. A survey of the literature revealed 17 cases of congenital myasthenia gravis. In 13 of these infants, the mother had myasthenia gravis and the infant had the typical picture. If these infants survive the neonatal period the disease disappears spontanously in a few days or weeks. It is possible that the mother's blood contains some substance that inhibits the formation of acetylcholine or accelerates its destruction. This substance is presumably destroyed or excreted by the infant during the neonatal period. Four reported cases of congenital myasthenia gravis were in children of nonmyasthenic mothers. The patient reported here belongs to this group. In such patients, the disease tends to be permanent. The patient whose case is reported was a 2-month-old girl who was hospitalized for the study of respiratory difficulty and inability to nurse. She was having considerable respiratory difficulty. The eyelids were slightly ptotic. There was a thin watery nasal discharge. The lips had a slight bluish tinge. The pharynx contained a large amount of watery secretions. The cry was feeble. Rhonchi were heard throughout the lung fields. Neurological examination showed hypoactive deep reflexes. Poliomyelitis, nuclear aplasia, amyotonia congenita, birth injury to the brain stem, and myasthenia gravis were considered. A therapeutic trial with neostigmine (Prostigmin) was begun. Within an hour respiration and expulsion of the secretions had improved considerably. She became more alert and active, and her partial ptosis disappeared. After much adjustment of the dosage schedule, the child was discharged four weeks after admission fairly well regulated on a regimen of 7.5 mg. of neostigmine bromide every eight hours, administered orally. Four days later she was readmitted; the dosage was modified to 5 mg. every four hours. At 8 months of age, she was still taking neostigmine and getting along fairly well.

A.M.A. Arch. Pathology, Chicago

56:103-230 (Aug.) 1953

Comparative Study of Reaction to Injury: II. Hypervitaminosis D in Frog with Special Reference to Lime Sacs. H. G. Schlumberger and D. H. Burk.—p. 103.

Effect of Injecting Rats with Homologous Renal Tissue Mixed with Adjuvants or Streptococci. E. Middleton Jr., E. B. Middleton and B. C. Seegal.—p. 12.

Potassium Dichromate Poisoning and Repeated Poisoning with Uranyl Nitrate: Effect on Serum Lipids of Rabbits. F. C. Bauer Jr., E. F. Hirsch, L. Carbonaro and G. C. Johnson.—p. 135.

Anomalous Origin of Left Coronary Artery from Fulmonary Artery (Bland-White-Garland Syndrome): Report of Two Cases. J. V. Denko and C. S. Hagerty.—p. 142.

Cultivation of Viruses: Critical Review. M. Sanders, I. Kiem and F. Lagunoff.—p. 148.

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Titles marked with an asterisk (*) are abstracted.

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American Journal of Ophthalmology, Chicago

36:895-1024 (July [Part 1]) 1953

Basement Membrane of Corneal Epithelium: Preliminary Report. C. C. Teng and H. M. Katzin.—p. 895.
Etiology of Narrow-Angle Glaucoma: Report of Case of Glaucoma Secondary to Anterior Displacement of Lens-Iris Diaphragm. O. Barkan.—p. 901.
Surgical Treatment of Glaucoma Complicating Congenital Aniridia. E. M. Blake.—p. 907.
Problem of International Nomenclature for Designating Visual Acuity. K. N. Ogle.—p. 909.
Unusual Type of Degenerative Retinopathy. H. C. Donahue.—p. 921.
Treatment of Cataract with Glaucoma: Consideration of Single as Well as Multiple Operative Technique. H. L. Birge.—p. 925.
Complications Following Cataract Extractions: Analysis of 1,001 Cataract Operations. A. A. Cinotti and J. H. Jacobson.—p. 929.
Atopic Keratoconjunctivitis. M. J. Hogan.—p. 937.
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Specific Vascular Lesions of Diabetes Mellitus: II. Retinopathy and Intercapillary Glomerulosclerosis. J. I. Goodman.—p. 957.
Progressive Senile Fibrillar Atrophy of Iris Stroma (Iridoschisis). L. F. Carter.—p. 967.
Hemangioma of Orbit: Report of Two Cases. E. C. Albers and V. R. Tokar.—p. 970.

American Journal of Pathology, Ann Arbor, Mich.

29:619-816 (July-Aug.) 1953. **Partial Index**

Nephrosclerosis and the Glomerulus. D. B. Jones.—p. 619.
Sudden Apparently Unexplained Death During Infancy: I. Pathologic Findings in Infants Found Dead. J. Werne and I. Garrow.—p. 633.
Pontine Hemorrhage in Intracranial Hypertension. W. S. Fields and B. Halpert.—p. 677.
Coronary Embolism in Bacterial Endocarditis. J. G. Brunson.—p. 689.
Minute Peripheral Pulmonary Tumors: Observations on Their Histogenesis. J. T. Prior.—p. 703.
Occurrence of Plasma Cells After Ionizing Irradiation in Dogs. F. J. Wohlwill and W. W. Jetter.—p. 721.
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Electron Micrographs of Erythrocytes from Swiss Albino Mice Infected with Herpes Simplex Virus (Strain P38). R. L. Reagan, W. C. Day and A. L. Brueckner.—p. 767.

American Journal of Psychotherapy, New York

7:415-628 (July) 1953. **Partial Index**

Principles of Group Psychotherapy. W. Goldfarb.—p. 418.
Meaning of Masochism. I. Bieber.—p. 433.
"Flight into Health." G. J. Train.—p. 463.
Some Observations on Selection of Patients for Psychosurgery and Psychotherapy After Operation. J. P. Cattell.—p. 484.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

70:183-364 (Aug.) 1953

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*Roentgen Localization of Bronchopulmonary Segments by Means of Laminagraphy, Particularly in Lung Tuberculosis. H. Adler.—p. 218.
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Experimental Method for Visualization of Hepatic Vein—Venous Hepatography. G. Tori and W. G. Scott.—p. 242.
*Roentgen Therapy of Malignant Lymphoma with Special Reference to Segmental Radiation Therapy: Results 1935-1945. J. F. Hynes and R. W. Frelick.—p. 247.
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Comparison of Reactions of Irradiated Parts of Bodies of Two Day Old Mice and Urodele Amphibians to Roentgen Treatment. V. V. Brunst, E. A. Sheremetieva-Brunst and F. H. J. Figge.—p. 283.

Congenital Pulmonary Arteriovenous Aneurysm.—A review of the literature revealed 85 cases of congenital arteriovenous aneurysm of the lung. Anatomically, pulmonary arteriovenous aneurysms were observed in any of the lobes of the right and left lung; 27 of the 85 patients had multiple lesions with involvement of two and more lobes, and 21 had lesions in both lungs. These lesions were hemangiomatous in nature; the majority were hemangiomas of cavernous type with large vascular channels permitting varying degrees of arteriovenous shunt. Physiological disturbances, when present, were secondary to the shunting of unoxygenated blood back into the left side of the heart with resultant anoxemia and a polycythemic response of varying intensity. Symptoms, when present, were usually due to the anoxemia and polycythemia and less commonly to the aneurysm itself. Many of the abnormal physical and laboratory findings were also secondary to the anoxemia; the only positive physical finding in connection with the aneurysm itself was the presence of a vascular murmur heard through the overlying lung and chest wall in 52 of the 85 patients. Roentgenologic findings revealed that large lesions are easily demonstrable on routine roentgenography, but small aneurysms and telangiectases can probably not be demonstrated by roentgenologic means. Laminagraphy and angiocardiography are the most definite roentgenologic methods available for accurate identification of pulmonary arteriovenous aneurysms. Surgical removal of an aneurysm appeared to offer the only logical method of definite therapy, and this was employed in 44 of the 85 cases reviewed. Between 1940 and 1952, 10 patients with clinically evident pulmonary arteriovenous aneurysm were observed at the Johns Hopkins Hospital. In one patient the diagnosis was established by necropsy and in six by surgical intervention. In the remaining two patients the diagnosis seems reasonably certain. Two patients were members of the same family.

Roentgen Localization of Bronchopulmonary Segments.—Many inflammatory changes in the lungs, and quite often localized pulmonary tuberculosis, are limited to the anatomic and functional unity of the bronchopulmonary segments. In most cases one is able to localize the pathological process by this simple and safe method. Ten bronchopulmonary segments are the apical segment, the posterior segment, the anterior segment, the middle lobe lateral segment, the middle lobe medial segment, the apical lower lobe segment, the medial basal (cardiac) segment, and the anterior, lateral, and posterior basal segments. A scheme is established to determine by laminagraphy to which of these segments a pathological process belongs. Judgment must be carefully made in processes located on the border of two segments and in cases of dislocation following shrinking. It is often possible to present laminagraphically the segmental bronchi in their longitudinal axis by adding a suitable oblique position. The pulmonary focus appears then in its characteristic shape; the cavities are usually oval in shape because of the traction carried out by the bronchovascular bundle. The laminagraphic appearance of pathological changes of the smaller bronchi is discussed. Aeration of the lumen and thickening and distention of the bronchial wall are the most remarkable signs thus obtained.

Roentgen Therapy of Malignant Lymphoma.—From 1935 to 1945, 52 consecutive patients with histopathologically proved malignant lymphoma were admitted to the Carpenter Memorial Clinic in Wilmington, Del. Of the 52 patients 4 had follicular lymphoblastoma, and 3 of these survived for from 6 to 13 years. Nineteen patients had lymphosarcoma with seven five year survivals. Nineteen had Hodgkin's disease with nine five year survivals. Five had reticulum cell sarcoma, of whom one survived for 10 years. The remaining five patients could not be classified, but their clinical course was that of malignant lymphoma, and none survived. Nineteen of the 52 patients survived more than five years after admission, an absolute five year survival rate of 36.5%. Six of 25 patients treated from 1935 to 1940 were alive and without recurrence at the end of 1950, a 10 year absolute survival rate of 24%. The consideration of several variants of malignant lymphoma together is justified by their similar clinical course and the identical therapy required. Roentgen rays, generated at 200 kv. (peak) with 0.5 mm. copper filtration, were used at 50 cm. target-skin distance for superficial lymph nodes and at 70 cm. for deep lymph nodes. The fields treated varied somewhat in size but averaged about 200 square centimeters each. Patients were treated five or six days weekly, at the rate of 100 to

200 roentgens through each of two such fields. Of the four techniques employed, namely segmental therapy (irradiation of all the major lymph node areas), partial segmental therapy (treatment to the lymph nodes of half the body, above or below the diaphragm), symptomatic therapy (treatment to the lymph nodes producing the most distressing symptoms), and local treatment to a single group of grossly diseased lymph nodes, the first one was used whenever possible and was applied to 23 patients. Originally only low doses were given, but the authors now believe that 1,000 to 1,200 r should be given to all fields and from 1,200 to 1,800 r to the grossly diseased lymph nodes. The plan of treatment provides for two opposing fields over the deep lymph nodes, while superficial lymph nodes are treated through one field only. Sufficient unirradiated bone marrow is present to prevent agranulocytosis if only half of the body is treated in one series, and after an interval of one to three months the other half of the body may safely be treated to complete segmental radiation therapy. Treatment to grossly uninvolved lymph nodes is necessary if long-term palliation or cure is to be obtained. Eight patients in good general condition, with apparently limited lymph node involvement, were not given adequate segmental irradiation, and subsequently had recurrence in untreated or lightly treated lymph nodes. Three of these are now well after further therapy, one is under treatment for recurrence, and four have died. These eight cases are described in detail. More aggressive treatment is recommended, and a tabulation of all 52 cases is included.

Am. Practitioner & Digest of Treatment, Philadelphia

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Treatment of Sarcoidosis with Cortisone: Discussion as to Its Mode of Action. I. Kass, A. Jackson and M. Slavin.—p. 503.
Perforated Peptic Ulcer During Cortisone Administration. J. H. Kier, B. R. Gendel and J. R. Rich.—p. 510.
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Use of Isopropyl Derivative of Isonicotinylhydrazine (Marsilid) in Treatment of Mental Disease. J. A. Smith.—p. 519.
Observations on Use of Sulfisoxazole (Gantrisin) in 1,000 Consecutive Patients, with Particular Reference to Frequency of Undesirable Side Effects. E. M. Yow.—p. 521.
Displacements of Uterus. E. Matlin.—p. 526.
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Angiology, Baltimore

4:283-396 (Aug.) 1953

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Endophlebohypertrophy and Phlebosclerosis: III. Left Innominate Vein and Superior Vena Cava. M. C. Littman, M. Lev and O. Saphir.—p. 301.
Aortography and Tumors of Liver: Preliminary Report. B. Milanés, J. McCook and A. L. Hernández.—p. 312.
*Treatment of Venous Thrombosis with Heparin. C. P. Artz and E. J. Pulaski.—p. 321.
*Effects of Ligation of Major Veins. L. T. Palumbo and R. E. Paul.—p. 337.
III. Hereditary Hemorrhagic Telangiectasia: Occurrence in the Negro. Relation to Blood Group. Effects of Rutin and Dicumarol Therapy. S. D. Kushlan.—p. 346.
Dissecting Aneurysm of Aorta: Report of Six Cases with Etiopathologic and Diagnostic Considerations. A. Jackson and M. Slavin.—p. 357.
Recurring Superficial Thrombophlebitis. R. B. Lynn.—p. 374.
Warfarin Sodium Derivative: (Coumadin® Sodium): Intravenous Hypoprothrombinemia-Inducing Agent. S. Shapiro.—p. 380.

Heparin in Venous Thrombosis.—Although it may be difficult to make a positive diagnosis of venous thrombosis in the early stage of the disease, treatment, in order to be successful, must be started at the first appearance of signs and symptoms. To delay it, in an attempt to make a more positive diagnosis, is to increase the morbidity and mortality rates. Since clinical experience with anticoagulant therapy has proved satisfactory, ligation of the inferior vena cava should be reserved for patients with septic thrombophlebitis, repeated pulmonary emboli, and pulmonary emboli occurring during anticoagulant therapy. In all other forms of deep venous thrombosis, anticoagulant therapy is recommended. Heparin is considered superior to bishydroxycoumarin (Dicumarol). The preferred method of administration of heparin (10 mg. per cubic centimeter) is by the intermittent intravenous technique (50 mg. of heparin every four hours). Concentrated heparin (200 mg. per cubic centimeter) is affective when given subcutaneously or intramuscularly, but subcutaneous injection is the preferred route of administration; this technique can be easily applied by nurses and does not cause discomfort to the patient. The preferred method of administration of heparin in gelatin (repository heparin) is 300 mg. given initially and 200 mg. given daily thereafter in the deep subcutaneous tissue on top of the deep muscle fascia. When it is necessary to terminate the anticoagulant effect of heparin after the administration of the drug in gelatin, an ice bag, fixed firmly with an elastic bandage over the site of the injection, will solidify the subcutaneous deposit of heparin in gelatin and arrest its absorption. Heparin therapy should be continued for several days after the patient is out of bed. It is believed that an increase in the coagulability of the blood occurs for one or two days after the termination of the heparin therapy. Unless heparin is continued until the patient is completely ambulatory, the formation of a new thrombus may occur after the cessation of the treatment.

Effects of Ligation of Major Veins.—Ligations of major veins were performed on 21 men between the ages of 26 and 72 years, most of them between the ages of 50 and 59, with a postphlebitic syndrome or an acute phlebitic process, with or without pulmonary infarctions. In 10 of the patients the inferior vena cava was ligated for control of repeated episodes of pulmonary infarction in 9 and for treatment of a postphlebitic syndrome in one. Of five patients in whom the common iliac vein was ligated, it was done for the treatment of a postphlebitic syndrome in four and for an acute phlebitic process in one. Of the remaining six patients, in five the superficial femoral vein was ligated bilaterally for control of repeated episodes of pulmonary infarction, and in the sixth it was done for control of an acute bilateral progressing phlebitis. The average follow-up for these patients was 462 days. Of the 21 patients 16 had had pulmonary infarctions that were clinically proven by roentgenograms; 12 of the 16 patients had had repeated episodes of infarction, and 4 had had only one such episode. Of the seven patients who had had pulmonary infarction during acute thrombophlebitis, it occurred during the first 10 days in four and after the 15th day in three. Recurrent infarction occurred in two patients after a major vein ligation. Of those two, one had a bilateral superficial femoral vein ligation on the seventh day after a transurethral resection of the prostate, and an inferior vena cava ligation was done because of the recurrent infarction. The other patient had a ligation of the left common iliac vein for the treatment of a postphlebitic syndrome of the left lower extremity. Sixteen days after this procedure he had a pulmonary infarction and 12 days later another infarction. This was followed by ligation of the inferior vena cava. There were no operative or postoperative deaths as a result of infarction or as a result of surgery. Hemorrhage was the chief operative and postoperative complication. Follow-up revealed slight restriction of activity in 9 of the 10 patients with ligation of the inferior vena cava, in 3 of the 5 with ligation of the common iliac artery, and in 1 of the 6 patients who had superficial femoral vein ligation. The patients who had a major vein ligation to prevent recurrent episodes of pulmonary infarction secondary to an acute thromboembolic process had less disablement and complaints than the group of patients who had a major vein ligation for a postphlebitic syndrome. Ligation of major veins to prevent recurrent episodes of pul-

monary infarction is a lifesaving procedure and is usually not followed by enough disablement or impairment of function of the extremities to prevent the patients from returning to their previous occupations or adequate means of livelihood.

Annals of Surgery, Philadelphia

138:145-288 (Aug.) 1953

Operability in the Young and Aged. W. H. Cole.—p. 145.
Acute Vascular Injuries in Korean War: Analysis of 77 Consecutive Cases. E. J. Jahnke Jr. and S. F. Seeley.—p. 158.
Mobile Neurosurgical Team. A. M. Meirowsky and J. C. Barnett.—p. 178.
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Appraisal of Surgical Treatment of Mitral Stenosis. E. S. Hurwitt, A. Bloomberg, R. Aaron and others.—p. 219.
*Liver Nodules Encountered at Laparotomy: Significance and Treatment. C. G. Mixter and C. G. Mixter Jr.—p. 230.
Evaluation of Celiac Ganglionectomy in Prevention of Experimental Peptic Ulcer. T W. Holmes Jr.—p. 240.
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Thrombosis of Abdominal Aorta Treated by Thrombo-Endarterectomy: Case Report. J. P West, C. F. Schetlin and F. J. Schilling.—p. 259.
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Acute Pneumocholecystitis: Review and Report of Two Cases. L. G. Bell, R. B. Brown and H. F. Lenhardt.—p. 268.
Spontaneous Rupture of Kidney Tumors. J. Frumkin and S. Meigher. —p. 275.
Idiopathic Segmental Hemorrhagic Infarction of Greater Omentum. R. J. Tille Jr.—p. 279.
Adjustable Spring Clamp (Serrefine) for Cardiovascular Surgery. R. A. Nabatoff.—p. 285.

Liver Nodules Encountered at Laparotomy.—The Mixters stress that palpation in the liver for nodules or masses is an important part of the exploration of the abdomen prior to surgical treatment of the disease for which the laparotomy is performed. The size, shape, location, and consistency of such lesions will often give a clue to their true nature, yet these factors may also be misleading. Whereas the surgeon is very apt to submit for frozen section suspected metastases occurring elsewhere within the abdominal cavity, he is often prone to rely on his clinical impression where hepatic masses are concerned. To illustrate the importance and the difficulties of establishing an accurate diagnosis of liver masses discovered at laparotomy, the authors cite a number of cases seen by themselves or reported in the literature. Since clinical judgment as to the nature of hepatic nodules discovered at laparotomy is frequently in error, biopsy is indicated. The selection of the operative procedure and the prognosis must be based on the entire pathological picture, including the histological nature of the liver growth. Curative, rather than palliative, procedures should be carried out when biopsy or excision of nodules in the liver cannot be accomplished in otherwise operable extrahepatic malignant lesions. Isolated blood-borne metastases have been successfully removed from the lung, brain, and skeletal system, and evidence exists that solitary metastases also occur in the liver and that their removal is indicated when the primary tumor is controllable and there is no evidence of incurable spread elsewhere. Radical operative procedures of this type can be undertaken with the expectation that a number of patients will receive better palliation and that some will be cured.

Arizona Medicine, Phoenix

10:279-310 (Aug.) 1953

Thoracoplasty with Subscapular Paraffin Pack. W. M. Lees, R. T. Fox, M. Castellanos and others.—p. 279.
Diagnostic and Therapeutic Nerve Blocks: Their Use in Combating "Pathologic" Pain. J. S. Lundy.—p. 283.

Arkansas Medical Society Journal, Fort Smith

50:43-58 (Aug.) 1953

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Tumors of Brain and Spinal Cord in Children. O. T. Bailey.—p. 47.

Blood, New York

8:679-768 (Aug.) 1953

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*Bone Marrow Changes in Patients with Chronic Leukemia Treated by Splenic X-Irradiation: Preliminary Report. F. W. Gunz.—p. 687.
Age, Sex, and Race Selection at Death from Leukemia and Lymphomas. A. G. Gilliam.—p. 693.
Studies on Platelets: X. Morphologic Characteristics of Megakaryocytes by Phase Contrast Microscopy in Normals and in Patients with Idiopathic Thrombocytopenic Purpura. A. V. Pisciotta, M. Stefanini and W. Dameshek.—p. 703.
Further Studies on Hemoglobin C: I. Description of Three Additional Families Segregating for Hemoglobin C and Sickle Cell Hemoglobin. J. V Neel, E. Kaplan and W. W. Zuelzer.—p. 724.
Id.: II. Hematologic Effects of Hemoglobin C Alone and in Combination with Sickle Cell Hemoglobin. E. Kaplan, W. W. Zuelzer and J. V. Neel. —p. 735.
Be, a New "Private" Blood Factor. I. Davidsohn, K. Stern, E. R. Strauser and W. Spurrier.—p. 747.
Splenic Aspirations in Multiple Myeloma. H. D. Shapiro and R. J. Watson.—p. 755.

Bone Marrow Changes After Splenic Irradiation in Leukemia.—The work reported by Gunz was undertaken with the aim of determining what changes take place in the bone marrow of leukemic patients in response to local irradiation of the spleen with roentgen rays. Studies were made on 15 patients with chronic myeloid leukemia and on 4 patients with other diseases. The bone marrow was usually obtained by sternal puncture, except in one patient whose iliac crest was punctured, and was carried out before and 80 minutes after the first and 24 hours after the last treatment. Patients were initially either untreated or had had no therapy during recent months. The site of aspiration was protected from stray radiation by means of lead rubber. Radiation factors varied from case to case, but all treatments were made with x-rays in the voltage range of 200,000 to 230,000. The investigation revealed two points: (1) changes in the composition of the bone marrow follow local x-irradiation of the spleen in some patients with chronic myeloid leukemia; and (2) inhibition of mitosis among the myeloid cells of the bone marrow can follow local irradiation of the spleen in these same patients although precautions have been taken to protect the marrow from direct irradiation. Of these two points the first is not unexpected considering the nature of the usual clinical response to splenic irradiation in patients with chronic myeloid leukemia; this consists not only of an involution of the enlarged spleen but also of a reduction in the raised number of myeloid cells in the peripheral blood and generally an increase in the red blood cell count. Mitotic inhibition in the marrow 80 minutes after irradiation of the spleen has not hitherto been described and if confirmed would constitute evidence in favor of that "indirect" action of x-rays in leukemia that has so frequently been suggested but not as yet satisfactorily demonstrated. Doses of direct (stray) irradiation received over the site of marrow aspiration were measured and found to vary between 1 and 3 r. Doses of this magnitude are not sufficiently high to produce mitotic inhibition in leukemic leukocytes. Moreover, no inhibition was noted among the erythroid cells. It appears unlikely, therefore, that the effect was caused by direct irradiation of the bone marrow. It is more probable that the action of the x-rays on the spleen was indirectly responsible. The mitotic inhibition was temporary. It could not be shown 24 hours after the last treatment in any of the cases investigated. The percentage of mitoses in leukemic marrow does not usually exceed that in normal marrow so that a permanent depression of the number of mitoses as a result of x-ray treatment is not likely.

Florida Medical Association Journal, Jacksonville

40:77-142 (Aug.) 1953

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Georgia Medical Association Journal, Atlanta

42:361-394 (Aug.) 1953

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Geriatrics, Minneapolis

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Journal of Gerontology, St. Louis

8:255-414 (July) 1953. **Partial Index**

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Prevalence of Diabetes Mellitus Among the Aged Tested in Community Diabetes Program. C. L. Krag.—p. 324.
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Cornell Medical Index-Health Questionnaire: VI. Relation of Patients' Complaints to Age, Sex, Race, and Education. K. Brodman, A. J. Erdmann Jr., I. Lorge and H. G. Wolff.—p. 339.
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Journal of Investigative Dermatology, Baltimore

21:69-130 (Aug.) 1953

Specific Tissue Alteration in Leprous Skin: III. Specificity of Tuberculin Reaction in Lepromatous Leprosy. E. Kocsard and F. Sagher.—p. 69.
Isoniazid in Treatment of Sarcoidosis: Preliminary Report. E. Edelson.—p. 71.
*Treatment of Chronic Discoid Lupus Erythematosus with Large Doses of Vitamin B_{12}. M. D. Marcus, A. H. Conrad Jr. and R. S. Weiss.—p. 75.
Treatment of Acne with Tace. R. L. Kile.—p. 79.
Molecular Aspects of Cornification. E. Meirowsky and L. W. Freeman.—p. 83.
Effect of Topically Administered Hydrocortisone Upon Dystrophic Skin, as Revealed by "Pneumoderma" Technic. H. Selye.—p. 91.
Treatment of Lupus Erythematosus with Mepacrine (Atabrine). G. Harvey and T. Cochrane.—p. 99.
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Studies of Nitrocellulose Silicone Cream as Skin Protectant Against Eczematogenous Contact Allergens. C. C. Smith, T. L. Day and E. H. Zimmerman.—p. 111.
Clinical Assay of New Fungicide, P-594 (2-Nitro-2-Bromo-1-Methoxy-1-Phenylpropane). W. E. Wooldridge.—p. 121.
Effect of Di-Paralene (Chlorcyclizine Hydrochloride) on Systemic Fungous Infections in Mice. W. J. Fahlberg.—p. 125.

Large Doses of Vitamin B_{12} in Discoid Lupus Erythematosus.—Seventeen cases of chronic discoid lupus erythematosus were treated with vitamin B_{12} in doses of 1,000 mcg. three times weekly. The treatment was painless and without side reactions, but most patients showed no change. Three showed very favorable response and some showed slight improvement. The results were inferior to those obtained with gold and bismuth salts. Vitamin B_{12} therapy has been discontinued for routine use.

Journal of Nervous and Mental Disease, New York

117:191-286 (March) 1953

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Proprioceptive Facilitation of Voluntary Motion in Man. M. G. Levine and H. Kabat.—p. 199.
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Pharmacotoxic Therapy with Atropine Sulfate: Remission in Two Cases with Rorschach Findings. G. R. Forrer, C. Draper and J. L. Grisell.—p. 226.
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Journal of Pediatrics, St. Louis

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Physical Growth and Development of Children Who Survived Atomic Bombing of Hiroshima or Nagasaki. W. W. Greulich, C. S. Crismon and M. L. Turner.—p. 121.
Lead Poisoning: Roentgenograms of Chest as an Aid in Diagnosis. G. P. Keefer and J. F. Mokrohisky.—p. 146.
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Use of Milontin in Treatment of Petit Mal Epilepsy (Three Per Second Spike and Wave Dysrhythmia). P. J. Doyle, S. Livingston and P. H. Pearson.—p. 164.
Poliomyelitis in Newborn Infant. H. Abramson, M. Greenberg and M. C. Magee.—p. 167.
Effect of Penicillin Injections During Acute Poliomyelitis. S. F. Brown.—p. 174.
*Clinical Study of Neuroblastoma. O. J. Oberkircher, W. J. Staubitz and F. J. Parmenter.—p. 177.
Spinal Cord Tumors in Children: Review of Subject and Presentation of 21 Cases. F. M. Anderson and M. J. Carson.—p. 190.
Meconium Ileus (Complete Obstruction) in Premature Infant: Medical and Surgical Treatment with Recovery. J. Borenstine and J. H. Printz.—p. 208.
Osteochondroma of Distal Femoral Epiphysis. J. S. Donaldson, H. H. Sankey, B. R. Girdany and W. F. Donaldson.—p. 212.
Early Development of Children with Schizophrenia. H. Bakwin.—p. 217.

Clinical Study of Neuroblastoma.—Oberkircher and associates have observed an unusual case of neuroblastoma since 1936. When the infant was 10 months old, the mother discovered a mass in the left upper abdomen that rapidly increased in size. One month later, hematuria and abdominal pain developed. Retrograde pyelography revealed a large mass in the region of the left kidney. A transperitoneal exploratory operation revealed a nonremovable tumor of the left kidney. Biopsy material was interpreted as Wilms' tumor. A series of roentgen ray treatments was given, and several months later a second attempt to remove the tumor failed. In succeeding years several additional series of roentgen treatments were given. At the age of 12 when the girl began to menstruate she still had a hard, fixed nodular tumor in the abdomen. The pathological material removed by biopsy in 1936 and then interpreted as Wilms' tumor of the kidney has recently been reexamined. The present diagnosis is neuroblastoma. The patient is now 17 years old, and her general condition is excellent. This case stimulated the authors to analyze the other cases of neuroblastoma at the Roswell Park Memorial Institute and the Buffalo Children's Hospital. On reviewing the 20 additional cases they were deeply impressed by the lack of response to treatment and the early fatal outcome in most of the cases. Neuroblastoma is one of the most frequent retroperitoneal malignant tumors in infants and children. In this series of 21 cases the primary tumor occurred in several areas of the sympathetic nervous system. Ten tumors were primary in the right adrenal. There were six involving the left adrenal. The remaining source of primary tumors were the thoracic sympathetic chain, 2; right kidney, 1; dorsal sympathetic chain, 1; and unknown, 1. The sex incidence is almost equal. Beside the patient who is now 17 years old and apparently well, another patient has survived five years and five months and at present is alive and well without evidence of disease. A third patient has lived one year and eight months since the diagnosis was established. This 19-year-old girl is alive and well at present. Apparently there is no adequate therapy for the neuroblastoma composed of immature cells. These malignant cells spread widely and rapidly, and the metastases make the outlook hopeless. Early surgery and irradiation are helpful in neuroblastomas com-

posed of more mature cells. These tumors are more encapsulated and tend to remain localized. Bone marrow aspiration is of definite value both for diagnosis and prognosis. Nitrogen mustard offers very little in the therapy of this disease. When anemia, fever, loss of weight, and a palpable abdominal mass are present in an infant, one must be suspicious of neuroblastoma. This lesion is the commonest retroperitoneal malignant tumor in infants and young children.

Journal of Urology, Baltimore

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Congenital Absence of Urinary Sphincter with Operative Cure. J. A. Taylor and W. H. Berry.—p. 203.
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Late Renal Complications of Paraplegia: III: Treatment of Vesico-Ureteral Reflux by Skin Ureterostomy Through a Pedicle Trap. H. S. Talbot, D. P. Paull and G. R. Read.—p. 216.
Spinal Root Section in Treatment of Advanced Paraplegic Bladder. H. Brendler, E. G. Krueger, P. Lerman and others.—p. 223.
Sacral Neurotomy for Spastic Neurogenic Bladder. J. F. Patton and H. G. Schwartz.—p. 230.
Conservative Surgery in Treatment of Large Single Papillary Tumors of Bladder. D. R. Higbee.—p. 237.
Surgical Treatment of Tumors of Genito-Urinary Organs. A. L. Dean. —p. 246.

Surgical Treatment of Adrenal Gland for Cushing's Syndrome. —It is now generally believed that all patients with Cushing's syndrome have hyperadrenocorticism with excess production of 11-oxysteroids. Of 19 female and 9 male patients between the ages of 18 months and 58 years with Cushing's syndrome admitted to the Cleveland Clinic since 1933, 2 had a malignant adrenal cortical tumor, 4 had a solitary adenoma of the adrenal gland, 2 had small adenomas occurring in otherwise hyperplastic adrenal glands, and the remaining 20 patients had normal or enlarged adrenal glands. The range in weight of adrenal tissue removed from these 20 patients varied from 2.5 to 27 gm. per gland, while the average weight of the adrenal gland from a normal person is considered to be between 2.5 and 7 gm. In three out of four cases Cushing's syndrome was due to adrenal hyperfunction with or without hyperplasia of the gland; the remaining patients had either a benign or malignant cortical tumor. Rarely, the initiating cause of the syndrome is a basophilic pituitary tumor. Most of the features of Cushing's syndrome can be produced by the prolonged administration of adrenocorticotropic hormone (ACTH), which stimulates the adrenal gland, or large doses of cortisone or hydrocortisone (Compound F). The diagnosis of Cushing's syndrome depends on clinical observations supported by laboratory evidence. Roentgenographic studies are helpful in locating a sizeable adrenal tumor but not a small one. Consequently, simultaneous bilateral adrenal exploration should be performed. Treatment consists of excision of a tumor if present or subtotal adrenalectomy. The operation can be done on both adrenals simultaneously without undue risk. All patients should be given a protective dose of cortisone, 100 mg. intramuscularly about 12 hours before surgical intervention, and this should be repeated a few hours before the operation. Doses of about 50 mg. of cortisone should be given every 6, 8, or 12 hours after the operation depending on necessity. There is usually sufficient desoxycorticosterone-like action in cortisone to supply the daily need of this hormone in most patients; it may be necessary to give desoxycorticosterone in doses of 1 to 3 mg. daily to patients who have low serum sodium values not sustained by added salt in doses of 4 to 6 gm. daily as enteric coated salt tablets. At present it is not considered necessary to perform bilateral total adrenalectomy unless the disease is progressive after subtotal adrenalectomy (with about 90% of adrenal tissue removed) and a threat to life. With adequate resection of adrenal tissue the skin of the patient becomes normal in color and texture, hirsutism disappears, muscles strengthen, obesity vanishes, menstruation returns in women, glucose tolerance tests return to normal, and patients with diabetes show improvement. Osteoporosis does not show the same rate or degree of improvement, and hypertension does not always improve after subtotal adrenalectomy. Results were encouraging in eight patients with Cushing's syndrome owing to adrenal cortical hyperplasia treated in the last year and a half since cortisone came in use. One required secondary total adrenalectomy for control of the disease, and one patient was improved but died nine months after operation because of shock from an uncontrolled duodenal ulcer hemorrhage. The remaining patients are all improved or have too short a follow-up to be of value.

J. Pharmacology & Exper. Therap., Baltimore

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Value of Ammonium Chloride as Adjuvant to Mercurial Diuretics Determined by Bioassay in Patients with Congestive Failure. T. Greiner, H. Gold, L. Warshaw and others.—p. 481.

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*Retroperitoneal Tumor as Cause of Low Back and Leg Pain. G. W. Anderson and B. J. Alpers.—p. 553.
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Relationship of Homologous Brain Proteolipid to Allergic Encephalomyelitis in Guinea Pigs. N. P. Goldstein, L. C. Kolb, H. L. Mason and others.—p. 609.

Retroperitoneal Tumor as Cause of Low Back and Leg Pain.—Anderson and Alpers report on four patients to define the neurological features by which tumors in the retroperitoneal space may be recognized. The first patient experienced a sharp pain in the low back on attempting to lift a heavy log. The original sharp pain was replaced by a constant dull ache, aggravated by standing and radiating into both groins and into the right leg. The right kidney was enlarged, and intravenous urography revealed upward displacement of the right kidney. Necropsy established a retroperitoneal lymphosarcoma. The second patient had a history of back pain radiating into the right groin and testicle and accompanied by an aching in the anterior and lateral aspects of the right thigh. In spite of the lateral deviation of the upper portion of the right ureter and upward displacement of the right kidney, the diagnosis was not made at the time of his first examination. Because of the persistence and progression of his complaints, the urograms were repeated and revealed more lateral and upward displacement of the right ureter and kidney and, in addition, a definite bulging of the right border of the psoas muscle. Operation revealed a retroperitoneal fibrosarcoma. The third patient had right back and leg pain. She was suspected of having involvement of the roots of the right sciatic nerve by an intervertebral disk, but myelography was normal. After further progression of symptoms, roentgenographic evidence of a calcifying, eroding tumor was found in the right sacrum. In the fourth patient, the diagnosis was made on the basis of clinical findings. Because of spread of pain beyond the limits of the sciatic distribution, the absence of the patellar reflex, and the evidence of testicular and scrotal swelling, further studies led to a diagnosis of retroperitoneal tumor involving the right psoas muscle and extending into the right lumbosacral plexus. Operation revealed epidermoid carcinoma obstructing the right ureter and involving the right psoas muscle. On the basis of over 500 cases of retroperitoneal tumors reported in the literature, the usual symptoms of such tumors consist of vague digestive disturbances, progressive weight loss, weakness, constipation, urinary frequency and urgency, and complaints of abdominal swelling. Less common are pain in the lower abdominal quadrants, edema of the lower limbs, weakness with muscular atrophy of the leg, difference in surface temperature of the extremities, and back and accompanying leg pain. Although diagnosis of retroperitoneal tumor is ordinarily made on other than neurological features, there are instances in which neurological symptoms predominate.

New England Journal of Medicine, Boston

249:215-260 (Aug. 6) 1953

*Heart in I^{131}-Induced Myxedema: Comparison of Roentgenographic and Electrocardiographic Findings Before and After Induction of Myxedema. G. S. Kurland, R. E. Schneckloth and A. S. Freedberg.—p. 215.
Cerebral Circulation and Metabolism in Arteriosclerotic and Hypertensive Cerebrovascular Disease: With Observations on Effects of Inhalation of Different Concentrations of Oxygen. A. Heyman, J. L. Patterson Jr., T. W. Duke and L. L. Battey.—p. 223.
*Nor-Epinephrine in Treatment of Acute Meningococcemia with Shock (Waterhouse-Friderichsen Syndrome) and an Evaluation of Adrenocortical Function. H. S. M. Uhl.—p. 229.
Medicine's Number One Problem. H. A. Rusk.—p. 232.
Medical Management of Peripheral Arterial Occlusive Diseases. S. Wessler.—p. 233.

Heart in Myxedema.—Changes in the size and configuration of the shadow picture of the heart in 27 patients with heart disease and variations in the electrocardiogram in 28 patients with intractable angina pectoris or congestive heart failure were studied before and for 2 to 53 months after the occurrence of myxedema that was induced in each patient by one or more doses of radioactive iodine (I^{131}). All patients were distinctly hypothyroid and were maintained at basal metabolic rates of −15 to −25% on 6 to 90 mg. of desiccated thyroid daily. Alterations in heart size and electrocardiographic pattern were correlated with the level of hypometabolism as determined by the clinical state, basal metabolic rate, serum cholesterol, thyroid uptake of tracer doses of I^{131}, and serum protein-bound iodine. Ten of 13 patients who experienced striking or significant relief of angina pectoris after induction of hypothyroidism showed no increase in cardiac size after 2 to 48 months of hypometabolism. Two others presented no enlargement of the heart in 26 and 38 months of hypometabolism during which a good or excellent therapeutic result was obtained; subsequently, cardiac enlargement was noted in these cases during an exacerbation of angina pectoris and congestive heart failure. Five of six patients with angina pectoris not benefited by I^{131} therapy showed a progressive increase in the size of the heart. Six patients with chronic congestive heart failure showed no cardiac enlargement during most of 19 to 53 months of hypometabolism. In two patients an increase in the size of the heart was observed only shortly before death after 22 and 31 months of hypothyroidism, during which definite therapeutic improvement was experienced. In two patients with both angina pectoris and congestive heart failure, radioactive iodine-induced myxedema was followed by striking therapeutic benefit despite the progressive cardiac enlargement. The development of myxedema was accompanied by a decrease in electrocardiographic voltage, flattening or inversion of T-waves, and a slight decrease in the QT interval. Changes in the electrocardiogram regressed after the administration of small doses of thyroid. Thereafter, despite the hypometabolism for months or years, no further progression in the electrocardiographic pattern occurred. The data indicate that the "myxedema heart," in the sense of a condition precipitating angina pectoris or congestive heart failure or accompanied by pronounced electrocardiographic and roentgenologic changes, does not occur in patients with prolonged, controlled radioactive iodine-induced hypothyroidism.

Treatment of Meningococcemia.—A classic case of acute meningococcemia with shock (Waterhouse-Friderichsen syndrome) is described in a 17-year-old boy. An intravenous infusion of arterenol (Nor-Epinephrine) in a concentration of 4 mg.

per liter of 5% dextrose solution was used successfully over 60 hours to combat peripheral vascular collapse. Physiological studies of adrenocortical function during the acute stage of the illness and after recovery indicated no failure of the adrenal cortex, even in the presence of shock, which responded to arterenol but not to parenteral adrenocortical replacement therapy with aqueous lipoadrenal extract. There was probably no serious impairment of the tested adrenocortical function during the acute phase of the illness of the author's patient. Thus the pathogenesis of the peripheral vascular collapse in the Waterhouse-Friderichsen syndrome remains an unsolved problem. The use of a continuous infusion of arterenol was probably a life-saving measure and prevented irreversible shock and serious renal damage from prolonged ischemia. It is suggested that the use of this vasopressor agent be considered in all cases of septicemia with peripheral vascular collapse, especially when adequate trial with blood transfusions, plasma, fluids, and adrenal substitution therapy has been unsuccessful in forestalling shock.

249:261-302 (Aug. 13) 1953

*Laboratory and Clinical Experience with Carbomycin. W. L. Hewitt and J. P. Wood Jr.—p. 249.
Histoplasmosis in Life-Long Resident of New England. E. E. French, O. F. Jillson and L. S. Crispell.—p. 270.
*Acute Renal Insufficiency Due to Bichloride of Mercury: Observations on Gastrointestinal Hemorrhage and BAL Therapy. P. D. Doolan, W. C. Hess and L. H. Kyle.—p. 273.
Effect of Aging of Population on General Health Problems. R. T. Monroe.—p. 277.

Experience with Carbomycin.—The greatest activity of carbomycin (Magnamycin), a new antibiotic produced by the Streptomyces halstedii, is against gram-positive bacteria. This activity is greater than that of oxytetracycline (Terramycin) but less than that of penicillin. Some strains of Staphylococcus aureus develop resistance to carbomycin readily, and there is a high degree of cross resistance with erythromycin. Studies were made on adults with normal heart, liver, and kidney functions to whom carbomycin was given. Oral doses smaller than 500 mg. did not produce any antibacterial activity in the serum. But detectable serum concentrations were found in two-thirds of the persons who received it orally in doses greater than 500 mg. and in almost all those who received it intravenously in doses of 400 mg. diluted in 20 cc. of isotonic sodium chloride solution. The drug was always recovered from the urine in total amounts equal to 0.5 to 2.5% of the dose administered. The authors used carbomycin to treat 57 patients with acute infections due to the pneumococcus and to alpha-hemolytic, beta-hemolytic, and nonhemolytic streptococci. A daily dose of 2 gm. was used except for a few more acutely ill patients who received 3 gm. daily for several days or 400 mg. intravenously every 6 to 8 hours for from 24 to 96 hours. Good results were obtained in 34 of these patients. They were good in those with acute bronchitis; the temperature returned to normal within 24 hours and the sputum improved more gradually. There was a good clinical response in patients with acute follicular tonsillitis. The effects were poor in patients with subacute bacterial endocarditis, and there was no definite symptomatic improvement in those with urinary tract infections due to the streptococci faecalis and pyogenes. The response in patients with staphylococcal sepsis was not striking, and it was poor in patients with pneumonia whose sputum revealed Hemophilus influenzae. The bacterial colonies were increased in five of the last-named patients during the therapy. Side-effects consisting of gastrointestinal disturbances and skin eruptions occurred in 15 patients, but they were never severe. There was no clinical evidence of central nervous system toxicity or changes in reflexes. At present the use of carbomycin should be limited to those patients who are hypersensitive to penicillin or the newer antibiotics and to those with infections that have proved, or are frequently, resistant to penicillin, chlortetracycline (aureomycin), and oxytetracycline. An initial dose of 500 mg. (the maximum tolerated dose) every six hours should be given at once and, when possible, it should be supplemented initially with parenteral administration of the drug.

Bichloride of Mercury Poisoning and BAL Therapy.—A 28-year-old woman with a history of normal heart and kidney functions was hospitalized in a state of mild shock 2½ hours after she had ingested four tablets (2 gm.) of bichloride of mercury. Severe gastrointestinal bleeding was present, and both the fecal material and the vomitus gave a positive test for blood. About 240 cc. of brown, guaiac-positive urine was removed. Oxygen and parenteral administration of fluid cleared the shock-like state. Dimercaprol (BAL) was given three hours after she had ingested the tablets. Progressive acidosis and uremia developed, and early signs of potassium intoxication appeared. The gastrointestinal bleeding became massive. Dimercaprol and fresh blood transfusions, chlortetracycline (aureomycin), vitamin K, corticotropin, pyribenzamine, rutin, ascorbic acid thrombin, and absorbable gelatin sponge (Gelfoam) had no obvious effect on the bleeding or on the results of hematological studies. A forced dilution therapy was initiated, and the patient was given excessive quantities of fluids. The blood urea nitrogen level was lowered and the hemorrhage was brought under control. During the fluid therapy, the urine volume increased and 84 gm. of total nitrogen were excreted in 72 hours. There was a dramatic clinical improvement. The patient was discharged 56 days after admission. Follow-up examinations during three months revealed no significant gastrointestinal abnormalities other than a low specific gravity of the urine. The exact cause of bleeding in uremic gastroenteritis is still unknown. The excretion of urea into the gastrointestinal tract, the action of the intestinal bacteria, and the generalized bleeding tendency associated with the uremic syndrome are important factors. According to some authors, the bleeding is caused by the excretion of urea into the gastrointestinal tract. Here it is hydrolyzed by the intestinal bacteria into ammonia and carbonic acid, and it is the resulting ammonium carbonate that directly damages the mucosa. Dimercaprol should be given as early as possible to patients with bichloride of mercury poisoning. An initial intramuscular injection of 300 mg. followed by two or three 150 mg. injections during the first 12 hours and one or two such injections in the next 12 hours is the best plan of therapy. Then 150 to 300 mg. may be administered for one or two more days depending on the patient's condition. Whether therapy with dimercaprol should be continued after oliguria develops remains to be established. The authors discontinue it if the patient's condition permits. Otherwise they continue it with doses reduced to 75 to 100 mg. daily in two or three divided doses. Administration of the drug is then immediately discontinued if any toxic reaction appears. Forced fluid therapy is indicated in the presence of severe hemorrhage and impaired renal function in order to rapidly lower the blood urea nitrogen. Adequate amounts of dimercaprol given as soon as possible and combined administration of large quantities of fluid should reduce to a minimum the occurrence of renal failure.

New Jersey Medical Society Journal, Trenton

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Advances in Treatment of Gout. P. J. Warter.—p. 328.
Butazolidin® in Treatment of Arthritis: Clinical Studies with Phenylbutazone. J. A. Strazza Jr. and M. Ressetar.—p. 333.
*Perforated Gastric Ulcer During Cortisone Therapy for Rheumatoid Arthritis: (Report of Case). R. Kerdasha.—p. 343.
Chloride Test in Drownings and Death Due to Other Causes. G. F. Kamen.—p. 346.
Prevention of Athletic Injuries in High School. M. M. Novich.—p. 350.

Perforated Gastric Ulcer During Cortisone Therapy.—Kerdasha reports the case of a man, aged 63, in whom perforation of a gastric ulcer occurred while he was receiving cortisone therapy for rheumatoid arthritis. There was no proof that the ulcer did not exist prior to cortisone therapy. However, the initial appearance of an acute perforation 21 days after the start of cortisone administration in a patient who had no prior gastrointestinal symptoms suggests that the ulcer developed after therapy was begun. The most striking features were the patient's good general appearance, his feeling of well-being, and the moderately severe pain in the presence of a board-like abdomen due to peritoneal irritation of some 19 hours' duration. Operation disclosed a partially sealed

perforation in the anterior antral portion of the stomach. The perforation was closed with interrupted atraumatic absorbable surgical sutures; a tag of omentum was tied over the repaired area. The peritoneal cavity was thoroughly aspirated. The incision was closed without drainage. The patient did well; he was given 500 cc. of blood after the operation and made an uneventful recovery. Penicillin and streptomycin were given in 300,000 units and 0.5 gm. doses twice a day for five days. Extreme caution is urged in the use of adrenocortical steroids in the treatment of disease, particularly if associated with peptic ulcer.

North Carolina Medical Journal, Winston-Salem

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Medicine in the 17th and 18th Centuries, with Special Reference to Neurology. J. F. Fulton.—p. 261.
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Study on Therapeutic Evaluation of Isoniazid in Treatment of Pulmonary Tuberculosis. C. Ertug, H. F. Easom and H. S. Willis.—p. 278.
Technique of Saphenous Vein Stripping. A. Webb Jr.—p. 283.
Experiences in Transporting Children with Head Injuries. M. H. Grimmett.—p. 286.

Oklahoma State Medical Assn. J., Oklahoma City

46:167-204 (July) 1953

Use of Pan-Transfusion System. A. Bloxsom.—p. 169.
Wilms's Tumor of Infancy and Childhood. W. Benzing Jr.—p. 173.
Middle Life and Mental Disease. F. J. Braceland and W. W. Zeller. —p. 177.
Choice of Operation in Carcinoma of Rectum and Rectosigmoid. W. A. Fansler.—p. 183.

46:205-234 (Aug.) 1953

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Use of Anticoagulants in Coronary Artery Disease. C. S. Huntington. —p. 210.

Pediatrics, Springfield, Ill.

12:99-232 (Aug.) 1953

Effects of Witholding Fluid in Immediate Postnatal Period. J. D. L. Hansen and C. A. Smith.—p. 99.
Evaluation of Skeletal Age Method of Estimating Children's Development: I. Systematic Errors in Assessment of Roentgenograms. D. Mainland.—p. 114.
Endocardial Fibroelastosis. J. L. Dennis, A. E. Hansen and T. N. Corpening.—p. 130.
Changing Patterns of Respiration in Newborn Infants. H. C. Miller and F. C. Behrle.—p. 141.
Studies of Immunology of Newborn Infant: IV. Antibody Formation in Premature Infant. J. Dancis, J. J. Osborn and H. W. Kunz.—p. 151.
Absorption of Fat and Vitamin A in Premature Infants: III. Effect of Surface Active Agents on Absorption of These Substances. S. E. Snyderman, S. Morales, A. W. Chung and others.—p. 158.
Studies in Disorders of Muscle: IX. Glycogen Storage Disease Primarily Affecting Skeletal Muscle and Clinically Resembling Amyotonia Congenita. W. Krivit, W. J. Polglase, F. D. Gunn and F. H. Tyler. p.—165.
Bronchial Obstruction with Lobar Atelectasis and Emphysema in Cystic Fibrosis of Pancreas. P. A. di Sant'Agnese.—p. 178.
Absorption of Vitamin A Aldehyde by Children. C. P. Katsampes, A. B. McCoord, R. N. Hamburger and S. W. Clausen.—p. 191.

Pennsylvania Medical Journal, Harrisburg

56:609-768 (Aug.) 1953

Antibiotics and Intestinal Flora with Study of Terramycin Effect on Intestinal Flora. R. R. Tyson, E. H. Spaulding, G. P. Rosemond and J. A. Casey.—p. 627.
Acute Infectious Hepatitis. C. R. Schaefer.—p. 630.
Management of Patient with Ureteral Calculus. W. I. Buchert, H. E. Brown and G. H. Jones.—p. 633.
Vaginal Discharge: Diagnosis and Management in General Practice. J. A. Hepp.—p. 640.
*Multiple Curling's Ulcers Involving Esophagus, Stomach, and Duodenum. F. A. Bothe and R. B. Magee.—p. 642.
Surgical Treatment of Pulmonary Disease. G. M. Sanes.—p. 645.

Multiple Curling's Ulcer.—Bothe and Magee report the case of a 68-year-old woman who had been scalded in a bath tub and who had sustained second and third degree burns of the buttocks, perineum, and posterior portions of both lower extremities, including the feet. The patient had lived in a nursing home for nine years because of flaccid paralysis of the left arm and leg, extensive hypertrophic arthritis, and generalized arteriosclerosis. She had no gastrointestinal symptoms prior to admission to the hospital. The shock was treated, and pressure dressings were applied to the burns to preserve tissue fluid, but after the fifth day the burns were treated by the open method. On the 33rd hospital day, the patient vomited 220 cc. of dark blood. Small amounts of hematemesis followed daily. This bleeding was attributed to a Curling's ulcer, and medical management was instituted. She failed to respond to treatment. Bronchopneumonia developed, and the woman died on the 44th hospital day. At autopsy, it was found that the esophagus was coated with blood. The mucosa at the junction of the esophagus and stomach was eroded over an area of approximately 1.5 cm. The lesser curvature of the stomach contained a 2.5 cm. ulcer. Numerous ulcerations were present over the lateral walls and lesser curvature of the stomach from cardia to antrum. A single ulcer approximately 1 cm. in diameter lay astride the pylorus. Distal to this the gastrointestinal tract was normal. A diagnosis of multiple Curling's ulcer was made. This case is noteworthy not only because of the presence of multiple ulcers but because this extensive ulceration did not make itself known until the 33rd day after the burn, which is much later than Curling's ulcer usually appears. The occurrence of this type of ulceration in a person with long-standing hemoconcentration, in whom death was finally attributable to pulmonary emboli, suggests that embolic phenomena may be responsible for Curling's ulcerations.

Physiological Reviews, Baltimore

33:245-444 (July) 1953

Body Fat in Adult Man. A. Keys and J. Brožek.—p. 245.
Neural Transmission in Invertebrates. C. A. G. Wiersma.—p. 326.
Biochemical Aspects of Radiation Syndrome. M. G. Ord and L. A. Stocken.—p. 356.
Passage of Molecules Through Capillary Walls. J. R. Pappenheimer. —p. 387.
Physiology of Calcium Metabolism. R. Nicolaysen, N. Eeg-Larsen and O. J. Malm.—p. 424.

Plastic & Reconstructive Surgery, Baltimore

11:1-98 (July) 1953

Crouzon's Deformity with Hyperostosis Frontalis Interna. S. Moore, A. M. Moore and J. B. Brown.—p. 1.
Tumors of Head and Neck in Infancy, Childhood, and Adolescence. K. L. Pickrell, F. W. Masters, N. G. Georgiade and C. E. Horton.—p. 10.
Uncontrollable Factors in Rhinoplasty. J. Safian.—p. 24.
Further Developments in Treatment of Skin Lesions by Surgical Abrasion. P. C. Iverson.—p. 27.
Robert Abbe and His Contributions to Plastic Surgery. R. B. Stark. —p. 41.
Extensive Recurrent Desmoid Tumor of Abdominal Wall: Radical Excision Followed by Reconstruction of Abdominal Wall with Plastic Procedure: Report of Case. R. C. Ye, K. D. Devine and J. W. Kirklin.—p. 59.
Coverage of Thoracic Wall Defects by Split Breast Flap. W. J. Whalen. —p. 64.
Observations on Development of Circulation in Skin Grafts. V. Effect of an Anticoagulant (Dicumarol) on Homologous Skin Grafts. H. Conway, R. B. Stark and D. Joslin.—p. 74.
Id.: VI. Effect of Hyaluronic Acid and Homologous Skin Filtrate on Homologous Skin Grafts. H. Conway, R. B. Stark and D. Joslin. —p. 77.
Two-Stage Operation for Dupuytren's Contracture with Report of 38 Cases. F. L. Ashley.—p. 79.
Malignant Change in Keloids. C. E. Horton, J. Crawford and R. S. Oakey.—p. 86.

Postgraduate Medicine, Minneapolis

14:91-164 (Aug.) 1953

Surgical Considerations of Certain Hip Lesions. F. N. Potts.—p. 91.
Operation for Coronary Artery Disease. C. S. Beck.—p. 95.
Kaposi's Sarcoma (Angioreticulomatosis). F. Ronchese and A. B. Kern. —p. 101.
Surgical Aspects of Jaundice. W. H. Cole.—p. 112.
Aphasia—Etiology and Classification. L. J. Karnosh.—p. 118.
Diagnosis of Multiple Sclerosis. H. D. Jonez.—p. 121.
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Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

83:423-654 (July) 1953. **Partial Index**

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Simple Technic for Demonstrating Plaque Formation with Virus of Vaccinia. W. F. Noyes.—p. 426.
Characteristic Individual Electrophoretic Patterns in Humans. P. Bernfeld, V. M. Donahue and F. Homburger.—p. 429.
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Effect of Hyaluronidase on Experimental Hypercholesterolemia in Rabbits and Rats and Atheromatosis in Rabbits. J. Seifter, D. H. Baeder, W. J. Beckfield and others.—p. 468.
Leptospiral Macroscopic Agglutinating Antigens. W. G. Hoag, W. S. Gochenour Jr. and R. H. Yager.—p. 490.
Effect of Cortisone on Diphtheria Intoxication and Schick Test in Guinea Pigs. P. Rosenbaum and W. Obrinsky.—p. 502.
Effect of Thyroid Hormone on Growth of Thyrotrophin-Secreting Pituitary Tumors. E. L. Gadsden and J. Furth.—p. 511.
Effect of Diet on Rate of Alcohol Oxidation by Liver. E. Kerner and W. W. Westerfeld.—p. 530.
Excretion of 3-(3-Amino-2,4,6-Triiodophenyl)-2-Ethyl-Propanoic Acid (Telepaque) by Man. J. S. Schroder and D. Rooney.—p. 544.
Erythropoietic Stimulation Induced by "Anemic" Serum. A. Erslev, P. H. Lavietes and G. van Wagenen.—p. 548.
*Safety of Immune Serum Globulin with Respect to Homologous Serum Hepatitis. R. Murray and F. Ratner.—p. 554.
Method for Establishing Human Cells in Culture: Susceptibility to Poliomyelitis After Prolonged Cultivation. H. E. Swim and R. F. Parker.—p. 577.
Effect of Additions to ACD Blood on Erythrocyte Preservation. O. Schales—p. 593.
Production of Fever by Influenzal Viruses: IV. Tolerance to Mumps and Influenza Pyrogens. R. R. Wagner.—p. 612.

Safety of Serum Globulin with Respect to Hepatitis.—Immune serum globulin is prepared commercially by two processes: (*a*) salting-out, e. g., by means of ammonium sulfate, and (*b*) by the cold-ethanol process or a variation thereof. Blood obtained either by venipuncture or by extraction from placentas is used as the source material. The requirements of the National Institutes of Health for immune serum globulin stipulated that pools consist of at least 500 individual contributions. In view of the fact that approximately one person out of 300 receiving blood transfusion may develop hepatitis, it might be expected that many of the pools of plasma used in the manufacture of immune serum globulin would be infected with the agent, or agents, of homologous serum hepatitis. Although experience indicates that the incidence of homologous serum hepatitis following administration of immune serum globulin must be low, it was deemed advisable to determine the infectivity of immune serum globulin with reference to homologous serum hepatitis by inoculation studies in human volunteers. Material from a pool of infected plasma, approximately 130 liters, was used in the studies on the safety of plasma and its derivatives. Approximately 16 liters of this plasma were fractionated by the cold-ethanol process. The immune serum globulin so prepared was subjected to the required tests for sterility, safety, and pyrogenicity. This material was then inoculated subcutaneously into 10 volunteer subjects, each of whom received 2 ml. Simultaneously five volunteers in a control group each received 1 ml. of the original plasma from which the globulin had been produced. None of the subjects who received globulin developed hepatitis, with or without jaundice, while one of the five in the control group developed hepatitis with jaundice, and a second person in this control group developed positive hepatic tests suggestive of hepatitis without jaundice. Hepatitis with jaundice also developed in two of five subjects who were inoculated with 1 ml. amounts of a 1/1,000 N saline dilution of plasma from the same vial as that administered to the aforementioned control group. Thus it was demonstrated that immune serum globulin produced by the cold-ethanol method from proved infectious plasma failed to produce hepatitis in 10 volunteer subjects.

Psychiatric Quarterly, Utica, N. Y.

27:367-542 (July) 1953. **Partial Index**

Role of Psychiatrist in General Hospital. M. R. Kaufman.—p. 367.
Considerations in Differential Diagnosis of Schizophrenia. N. Bigelow. —p. 382.
Method of Evaluating Progress in Patients Suffering from Chronic Schizophrenia. D. H. Miller, J. Clancy and E. Cumming.—p. 439.
Simulation of Psychosis: Report of Three Cases. M. Wachspress, A. N. Berenberg and A. Jacobson.—p. 463.

Review of Gastroenterology, New York

20:537-600 (Aug.) 1953

Current Status of Medical Management of Peptic Ulcer. C. A. Flood and G. E. Hennig.—p. 543.
Gastric Cancer Problem. W. A. Cooper.—p. 553.
Gastric Carcinoma. H. D. Harvey.—p. 558.
Modern Trends in Gastroscopy. H. Barowsky.—p. 568.
Psychotherapy in Disorders of Gastrointestinal Tract. F. Wertham. —p. 573.
Diagnosis of Pancreatic Disease. A. Richman.—p. 579.

Rhode Island Medical Journal, Providence

36:345-412 (July) 1953

What the Practitioner Should Know About Poliomyelitis. L. Weinstein. —p. 361.
Where Do We Go from Here? H. Baldwin.—p. 368.
102nd Annual Meeting of the American Medical Association at New York City, N. Y., June 1-5, 1953. C. L. Farrell.—p. 378.

Rocky Mountain Medical Journal, Denver

50:613-702 (Aug.) 1953

Changing Attitudes Toward Operative Obstetrics. W. C. Keettel.—p. 635.
Acute Intestinal Obstruction. K. C. Sawyer.—p. 639.
Cardiac Arrest. T. F. Keyes.—p. 646.
The Physician and Military Medicine. G. E. Armstrong.—p. 649.
Role of Roentgen Therapy in Carcinoma of Breast. D. G. Edmunds. —p. 666.
Differential Diagnosis and Management of Acute Pharyngitis. J. F. Waldo.—p. 670.

Tennessee State Medical Assn. Journal, Nashville

46:275-312 (Aug.) 1953

Vagotomy and Antral Resection in Treatment of Duodenal Ulcer. J. L. Herrington Jr. and L. W. Edwards.—p. 275.
Treatment of Discoid Lupus Erythematosus. R. N. Buchanan Jr.—p. 279.
*Atabrine Therapy in Discoid Lupus Erythematosus. F. Miller.—p. 283.
Some Simple Surgical Procedures on Eyelids. P. M. Lewis.—p. 287.

Quinacrine (Atabrine) in Discoid Lupus Erythematosus.—Miller says that the spectacular success obtained with quinacrine (Atabrine) by Page in 1951, reported in *The Lancet* (**2:**755 [Oct. 27] 1951); abstracted in THE JOURNAL ([Feb. 2] 1952, p. 409) met with some skepticism, owing to the fact that several new agents have been tried in recent years in the treatment of lupus erythematosus but none has seemed to stand the test of time. A pharmacist, who had had chronic discoid lupus erythematosus with extensive involvement of the skin for three years first learned of this report in February, 1952. This man had received much therapy including gold and cortisone, but there had been little amelioration of symptoms or of skin eruption. Self-medication with quinacrine was begun, and after only a few weeks the patient became enthusiastic about his improvement. By May, 1952, there was a definite and marked objective improvement. Treatment with quinacrine in 9 of 10 patients, whose histories are presented here, showed great improvement; only one patient failed to improve. In three patients the lesions cleared completely, and in the others there was a gradual but steady involution of plaques. The sedimentation rate, however, has not been favorably influenced although patients appear to be greatly improved subjectively. In an addendum, the author states that since the submission of this report an additional 18 patients with lupus erythematosus have been treated with quinacrine. Results in the treatment of discoid lupus erythematosus have continued to be excellent, although only 4 of the 28 patients treated with quinacrine have been able to discontinue use of the drug. A number of patients have now taken quinacrine for more than 10 or 12 months. Although the effects of quinacrine are far from ideal, it seems to be superior to other treatments.

U. S. Armed Forces Med. J., Washington, D. C.

4:951-1106 (July) 1953. **Partial Index**

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Cornell Index: Comparison of Matched Sample of Psychiatric "Suspects" and Nonsuspects. B. Lyon, H. B. Molish and D. L. Briggs.—p. 977.
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Psychosomatic Disorders in the Service. W. F. Murphy.—p. 1003.
Cyanosis: Review of Current Concepts. L. R. Robbins.—p. 1017.
Pain Equivalents Treated with Electroshock. L. B. Hohman and W. E. Wilkinson.—p. 1025.
Local Chemotherapy of Surgical Wounds. P. W. Fenney and J. M. Miller.—p. 1031.
Evaluation of Decamethonium for Endotracheal Intubation. J. J. Snyder. —p. 1037.
Muscular Viability in Peripheral Nerve Injuries. E. M. Throne, W. H. Moore and R. C. Psaki.—p. 1043.
Paracolon Carriers Among Food Handlers. E. K. Tatsuno and O. A. Bushnell.—p. 1049.
Method for Screening Nonpathogens in Feces. A. C. Sanders and K. Okabe.—p. 1053.
Treatment of Cryptococcosis with Terramycin. B. D. Hall and R. E. Mardis.—p. 1061.
*Amebic Granuloma of Rectum Simulating Carcinoma. K. F. Ernst. —p. 1069.
Metaphysial Aclasis. T. B. Dameron Jr. and W. H. Gulledge.—p. 1077.
Large Caliber Missile Wound of the Heart. A. R. Nelson and J. J. Zuska.—p. 1083.
Cardiac Arrest with Recovery. B. H. Inloes Jr. and A. A. S. D'Amore. —p. 1089.

Amebic Granuloma of Rectum Simulating Carcinoma.—Infection of the intestinal tract by Endamoeba histolytica may result in the development of a chronic hyperplastic process, with or without abscess formation, that is known as amebic granuloma or ameboma. These lesions may cause intestinal obstruction and may be confused with carcinoma. The author cites the history of a man, aged 30, who was admitted to Letterman Army Hospital on July 1 with abdominal pain as his chief complaint. Abdominal pain and distention had been present since the middle of May. The patient was admitted to another hospital on June 21, and a diagnosis of tumor of the rectum was made there. A Frei test was negative. A stool examination for parasites and ova was ordered, but apparently was not done. On transfer to Letterman Army Hospital he had lost 42 pounds and had vague abdominal tenderness, but no mass was palpable through the abdominal wall. Rectal examination disclosed a firm mass posteriorly, on the right side, about the size of a lemon. It seemed to involve the wall of the rectum. His temperature varied up to a maximum of 100 F; his leukocyte count ranged up to 20,900, with 83% neutrophils; and his hemoglobin level dropped to 7 gm. after the onset of an intestinal hemorrhage that characterized the terminal stages of his illness. A barium enema revealed a constant filling defect encircling the upper half of the rectum. During proctoscopy an obstruction that could be bypassed on the left side was encountered 5 cm. above the anal orifice and a mass about 6 cm. in diameter, which was apparently in the rectal wall. On July 23 an exploratory laporatomy was performed. The organs in the pelvis were an adherent mass. This mass extended from the posterior surface of the urinary bladder to the sacral promontory, and the lower sigmoid went directly into it. A sigmoid colostomy was performed and division of the colostomy loop was completed on Aug. 4. The patient died one month later. At autopsy, scrapings from the margin of an ulcer in the rectosigmoidal mucosa revealed trophozoites of E. histolytica, and microscopic examination of the bowel showed colonization by the same organisms. In retrospect, the elevated leukocyte count, with a high per cent of neutrophils, and the febrile reaction perhaps should have suggested an inflammatory process. It is possible that the ulcer of the rectum noted at autopsy was present at the time of proctoscopy, but that it was not seen because of its location above and behind the elevated and indurated mass infringing on the lumen of the bowel. Amebic granuloma should be considered in the differential diagnosis of obstructive or deforming lesions of the large bowel.

West Virginia Medical Journal, Charleston

49:245-278 (Sept.) 1953

*Hypotensive Anesthesia. A. Brunschwig and C. P. Boyan.—p. 245.
Acoustic Nerve Tumors. R. M. Ferrell.—p. 247.
Problems of Health and Emotional Adjustment in Ageing. M. W. Thewlis.—p. 249.
Survey of Ragweed Pollination in Charleston-Kanawha County, West Virginia, Area, 1952. M. S. Scherr.—p. 253.
*Observations and Manifestations of Chronic Barbiturate Intoxication. A. A. Milburn.—p. 254.
Treatment of Arachnidism with Cortisone. C. E. Watson and J. E. Stone.—p. 258.

Hypotensive Anesthesia.—Brunschwig and Boyan attempted to reduce blood loss in radical excisional procedures by controlling hypotension. They induced hypotension during general anesthesia in a series of 68 cases by intravenous injection of hexamethonium bromide. The operations performed included radical hysterectomy and pelvic lymph node excision, total or partial pelvic exenteration, abdominoperineal resection of colon and hysterectomy, pancreatoduodenectomy, partial hepatectomy, total vulvectomy and radical inguinal node excision, thoracoabdominal gastroesophagectomy, bilateral adrenalectomy, excision of various types of pelvic and abdominal tumors, exploratory laparotomy, and radical mastectomy and neck dissection. The results were excellent in 36 cases and good in 17. The effect was undetermined in 5 cases, and in the remaining 10 there was either no apparent hemostatic effect or hypotension failed to develop. It seemed that younger persons do not respond as well as middle-aged persons. Hypotensive anesthesia does not seem necessary in routine procedures, and should be reserved for ultraradical surgery in which extensive dissections and large raw surfaces occur. Patients subjected to hypotensive anesthesia are in a very susceptible status in so far as the circulatory system is concerned, and therefore this type of anesthesia must be conducted by a physician specialist in anesthesiology.

Chronic Barbiturate Intoxication.—Eleven patients who could be called true barbiturate addicts were observed during 1951 at the Medical Center with which Milburn is connected. Six were addicted to barbiturates only and five were addicted to both barbiturates and alcohol, the barbiturate component predominating. The period of habitual use of the drug ranged from 3½ to about 17 years. The amount ingested per 24 hour period ranged from 4.5 to 17.5 grains (0.3 to 0.5 gm.). In only two cases was there an accurate history of therapeutic administration previous to addiction. Constitutional psychopathic inferiority or character disorders, such as anxiety, dependency, inadequacy, compulsive features, depressive tendencies, and character disorders with schizoid trends, were present in all. The clinical picture was that of moderately acute intoxication, that is, cortical depression and cerebellar dysfunction. Capacity for abstract thought and ability to think concretely were impaired. Defective judgment, somnolence, and confusion were present in all. There was neglect of the social amenities, and some patients were dirty and unkempt. Withdrawal of the barbiturate was attempted in all, but four left the hospital before emotional stability had been established. An abstinence syndrome always developed after sudden reduction or complete and abrupt withdrawal of the drugs. Petit mal or grand mal seizures occurred in some of the patients. One patient died after a succession of seizures. Six patients became acutely psychotic between the fourth and eighth day of abstinence. In many respects their symptoms resembled those of acute alcoholic hallucination. Treatment of barbiturate addiction should be carried out in a hospital where adequate control of the patient can be maintained. Withdrawal of the barbiturates is best effected by gradual reduction. If, during withdrawal, the patient becomes highly nervous, has tremors, anxiety, and severe insomnia, reduction of dosage should be stopped. If convulsions and hallucinations occur, the dosage should be raised and one or two doses administered intravenously. The hallucinations usually disappear by the fourth or fifth day following complete abstinence after gradual withdrawal. In the last phase of treatment, rehabilitative and psychotherapeutic measures should be instituted.

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Australian J. Exper. Biol and M. Science, Adelaide

31:105-192 (April) 1953. **Partial Index**

Quantitative Complement Fixation Test, with Special Reference to Low Titred Sera. D. Mountford.—p. 105.
*Comparison of Morphology of Vaccinia and Myxoma Viruses. J. L. Farrant and F. Fenner.—p. 121.
Non-Keratins of Human Toenails. A. Bolliger and R. Gross.—p. 127.
Studies on Pathogenesis of Hitherto Undescribed Virus (Hepato-Encephalomyelitis) Producing Unusual Symptoms in Suckling Mice. N. F. Stanley, D. C. Dorman and J. Ponsford.—p. 147.
Polarographic Study of Antigen-Antibody Complex. B. Breyer and F. J. Radcliff.—p. 167.
Sensitive Photo-Electric Colorimeter. H. F. Holden.—p. 173.
Interaction of Thrombin with Plasma Components of Man and Experimental Animals. P. Fanti and L. Ebbels.—p. 175.

Morphology of Vaccinia and Myxoma Viruses.—According to Farrant and Fenner, there is general agreement among virologists that, from the viewpoint of taxonomy, morphology is the most important single property of the animal pathogenic viruses. Study of stained smears of the elementary bodies of the virus of infectious myxomatosis with the light microscope established that in appearance they resembled the elementary bodies of vaccinia. This similarity was confirmed by electron microscopic examination of these viruses, which revealed that the elementary bodies of both were almost identical in size and exhibited the brick-shaped appearance characteristic of the pox viruses. Despite this evidence, myxoma is not generally classified as a pox virus but has usually been grouped with Rous sarcoma and Shope papilloma viruses as a tumor-producing agent. Detailed studies, by one of the authors, of myxomatosis in European rabbits revealed that there was a closer similarity between the pathogenesis of myxomatosis and the pox diseases than had previously been recognized. A more detailed electron microscopic examination of myxoma virus revealed that the elementary bodies of myxoma and vaccinia viruses are identical. Both have the brick shape characteristic of the pox viruses. The dimensions of the osmium-fixed particles of the two viruses are given. Myxoma particles contain dense pepsin-resistant central bodies similar to those demonstrated in vaccinia and fowlpox viruses by other workers. These facts, together with the recent demonstration of a close similarity between the pathogenesis of myxomataosis and the pox diseases, indicate that myxoma belongs to the pox group.

British Heart Journal, London

15:273-368 (July) 1953

*Familial Incidence of Congenital Malformation of Heart. T. McKeown, B. MacMahon and C. G. Parsons.—p. 273.
Ballistocardiograms After Cigarette Smoking in Health and in Coronary Heart Disease. C. B. Henderson.—p. 278
Congenital Tricuspid Atresia. R. Astley, J. S. Oldham and C. Parsons.—p. 287.
Left Atrial and Pulmonary Capillary Venous Pressures in Mitral Stenosis. R. G. Epps and R. H. Adler.—p. 298.
Persitent Left Superior Vena Cava Draining Pulmonary Veins. F. Gardner and S. Oram.—p. 305.
Angiocardiogram in Fallot's Tetralogy. J. B. Lowe.—p. 319.
Fatality Following Cardiac Catheterization Injury. J. F. Goodwin.—p. 330.
Necropsies in Some Congenital Diseases of Heart, Mainly Fallot's Tetralogy. W. D. Brinton and M. Campbell.—p. 335.
Cation Exchange Resin (Resodec) in Treatment of Cardiac Edema. A .A. F. Peel and T. Semple.—p. 350.

Familial Incidence of Congenital Malformation of Heart.—The familial incidence of congenital heart disease was recorded for 425 families which contained 431 probands born to Birmingham mothers between 1940 and 1949. The diagnosis of congenital malformation of the heart was established in the proband by postmortem examination, at operation, or clinically by a consultant physician. There were six affected by congenital heart disease (18 per 1,000) among 342 siblings born after the proband. This is approximately six times the incidence (3.2 per 1,000) in the general population of births. The incidence of malformations other than congenital heart disease was not raised in siblings of probands. The nature of the cardiac defects was fairly reliably diagnosed in five families with two affected members; in three of the five families the lesions were identical in both persons affected. This evidence suggests that the risk of recurrence of the same cardiac malformation may be greater than the risk of a different one. Five confirmed and 13 unconfirmed cases of congenital malformation of the heart were identified among 4,143 first cousins of probands. Of 834 parents, 14 were said to have congenital heart lesions. Further clinical examination indicated that eight of them were normal, four had rheumatic heart disease, and only two had congenital heart lesions. There were two marriages of first cousins among 424 marriages of parents of probands; in both cases, the proband had dextrocardia and transposition of the viscera. There were seven patients with dextrocardia among the probands, and the high incidence of consanguinity of parents in these cases provides support for Cockayne's suggestion that this condition may be inherited as a recessive.

British Journal of Experimental Pathology, London

34:233-340 (June) 1953. **Partial Index**

Interference with Antitoxic Responses in Immunisation with Combined Prophylactics. M. Barr and M. Llewellyn-Jones.—p. 233.
Preparation of Non-Flocculating Diphtheria Antitoxin by Absorption of Non-Antitoxic Antibodies. C. G. Pope and M. F. Stevens.—p. 241.
Interaction of Antigens and Antibodies in Presence of Low Concentrations of Salt. J. R. Marrack and R. A. Grant.—p. 263.
Studies on Antigenic Structure of Herpes Simplex Virus. J. A. H. Brown.—p. 290.
*Observations on Poliomyelitis Complement-Fixation Test. G. L. Le Bouvier.—p. 300.

The Poliomyelitis Complement Fixation Test.—The studies described are preliminary to work with human serums. The author stresses that the technique of Fulton and Dumbell, in which drops of reagents on perspex sheets are used, was successfully applied to poliomyelitis antigen-antibody systems. The different ways of performing the test are described. The antigen was an aqueous suspension of the brains of very young mice infected with the "adapted" MEF$_1$ strain of type 2 poliomyelitis virus; unlike that of Casals and Olitsky, it was not acetone-ether extracted. In two-dimensional complement fixation tests, with varying concentrations of complement and serum, as in conventional one-dimensional tests with a single complement dose, specific fixation was obtained with the unextracted antigen and hyperimmune Lansing and MEF$_1$ (type 2) antiserums. No specific fixation was detected with hyperimmune monkey serums against type 1 and type 3 poliomyelitis viruses. A few human serums were examined. In general those from children and adults with no history of recent poliomyelitis showed no fixation with the unextracted poliomyelitis antigen although some Wassermann positive serums gave variable nonspecific reactions. Paired serums from patients showed mostly slight, but in some cases definite, fixation with the type 2 antigen in one or other specimen. Heating at 56 C for 30 minutes destroyed the infectiousness of the antigen for mice, as did ultraviolet irradiation for 5 minutes. Heating reduced the titer slightly, whereas this amount of irradiation did not.

British Journal of Industrial Medicine, London

10:141-216 (July) 1953

The Pre-Impinger: A Selective Aerosol Sampler. K. R. May and H. A. Druett.—p. 142.
Studies on Nature of Silicosis: Effect of Silicic Acid on Connective Tissue. P. F. Holt and S. G. Osborne.—p. 152.
Incidence of Peptic Ulcer and Chronic Gastritis Among Swedish Sea Pilots. T. Dalhamn.—p. 157.
Acute Poisoning Caused by Ingestion of Ethylene Chlorohydrin. F. Ballotta, P. Bertagni and F. M. Troisi.—p. 161.
Night Work and Shift Changes. S. Wyatt and R. Marriott.—p. 164.
Legislation and Litigation: Comments on Development of Industrial Law. W. M. Cooper.—p. 173.
From Factory Inspection to Adult Health Service: Review of Governmental Administration of Occupational Health. M. I. Roemer.—p. 179.
Occupational Health Problems of English Painters and Varnishers in 1825. G. Rosen.—p. 195.
Preliminary Notes on Treatment of 50 Cases of Tenosynovitis in Industry. E. L. Knowles and M. D. Kipling.—p. 200.
Occupational Hygiene Team. P. H. Nash and R. J. Sherwood.—p. 202.

British Journal of Plastic Surgery, Edinburgh

6:73-148 (July) 1953. **Partial Index**

Classification of Haemangiomata. F. L. F. Innes.—p. 76.
*Conservative Treatment of Haemangiomatous Naevi. H. J. Wallace. —p. 78.
Treatment of Haemangiomata. D. N. Matthews.—p. 83.
Reconstruction of Pharynx After Pharyngo-Oesophago-Laryngectomy. V. E. Negus.—p. 99.
Repair Following Pharyngo-Oesophago-Laryngectomy. F. T. Moore and T. Faulkner.—p. 102.
Skin Transfer to Amputation Stumps. J. R. Ascott.—p. 115.
Plantar Keratoderma Treated by Split-Skin Grafts. D. Wynn-Williams. —p. 123.
*Tylosis. D. Dencer.—p. 130.
Palpebral Ptosis: Correction by Transplant of Fascia Lata. R. Farina and P. de Poledo Piza.—p. 141.

Conservative Treatment of Hemangiomatous Nevi.—Wallace observed 300 patients with various forms of hemangiomas appearing soon after birth. In 95% of these, follow-up could be continued for an average of seven years. He excludes from observation arterial hemangiomas, diffuse hemangiomatosis, gigantism, and multiple familial telangiectasia. He classifies the lesions into two groups; flat and raised. The flat group includes the spider nevus (stellate hemangioma), which is rarely present at birth. It may appear for the first time in adult life and it may undergo spontaneous regression in childhood. This group also includes the salmon patch (erythema nuchae), which is pale pink, occurs especially on the nape of the neck and forehead, and fades in a few months, and the port-wine stain (naevus flammeus), which is of deeper color and consists of a thin layer of capillary tissue in the dermis. The port-wine stain is permanent. A rare variant of this is a thicker plum-colored nevus often associated with intracranial lesions, the Sturge-Weber syndrome. Application of thorium X is the only effective treatment in port-wine stains. In about two-thirds of the patients treated with thorium X the intensity of the staining was greatly reduced; in the remaining one-third improvement was minor. These results although unsatisfactory are superior to those obtainable with freezing, x-ray, or even plastic surgery. The latter treatment, however, is the only one that gives hope of improvement in the plum-colored lesions of the Sturge-Weber syndrome. Treatment is most controversial in the raised types of hemangioma. The author observed 208 patients with strawberry nevi, often multiple, and 98 patients with 121 cavernous nevi of which 78 had some superficial capillary element. In both types the nevus may appear at or a month or two after birth and may grow out of proportion to the child. After a few months, this disproportionate growth ceases and is followed by gradual involution over the next few years. Most of the involution occurs within the first two or three years of life but may continue up to the age of 7 years. In strawberry hemangioma, the appearance of grey flecks is the earliest sign of spontaneous involution. Ulceration occurred in a few patients but did not cause serious trouble and was not comparable to the ulceration following many forms of treatment. The danger of strawberry or cavernous hemangiomata enlarging to such a degree that they injure vital structures has been greatly exaggerated. There is seldom, if ever, any justification for the mutilating surgery that is occasionally performed. Most of the recorded reports of malignant change in these hemangiomas bear the imprint of panic combined with inadequate knowledge of their natural history. There is, however, a very rare type of strawberry hemangioma that does not alter in size out of proportion to the patient either during infancy or childhood but in which maliginant change has been recorded at or after puberty, but never before. The general impression of these lesions is that they are redder than the usual and at no time show any signs of involution. It is, therefore, fairly easy to recognize such very rare lesions by the age of 6 or 7 years, and excision seems to be indicated.

Tylosis.—According to Dencer, tylosis is a rare congenital hyperkeratosis affecting the hands and feet. The part most involved in the feet is the weight-bearing area. The thickening tends to spread up and to encase the heel. Cracks are generally present, and these often become infected. This condition may produce little or no disturbance, or the thickening of the skin of the hands may seriously interfere with finer movements of the fingers and reduce tactile sensibility. The soles tend to be more painful than the palms, and frequent attention may be necessary to enable the patient to remain ambulant. The disorder may spread to the dorsum of the fingers or toes, and frequently the nails are attacked. They become thick, opaque, raised up from the nail bed by a horny accumulation beneath them. In some cases the associated onychodystrophy gives rise to symptoms severer than the skin lesion. The condition should be distinguished from the acquired hyperkeratoses due to the excretion of arsenic, from Mal de Meleda seen on the Dalmatian coast, from hereditary disseminate keratoma, and from disseminate keratoderma of the palms and soles. Before presenting the histories of five patients with tylosis that he observed, the author cites other reports on this condition and gives particular attention to the possible role of vitamin A deficiency in the causation. The five cases presented occurred in two families in which the condition appeared in each of several generations. The treatment so far has been largely palliative. Local measures, such as rubbing with fine sandpaper or softening the skin with salicylic acid and other keratolytics, may keep the condition under control. Vitamin A therapy has been tried with doses of 100,000 units daily for long periods. Superficial x-ray therapy has been tried but is not a completely satisfactory measure and is not without risk. Temporary spontaneous cures have been known to occur, and temporary cure has also occasionally resulted from prolonged bed rest. The author presents the history of one woman in whom the condition was so severe that she was unable to bear any weight on her feet, and she had to do all her housework on her hands and knees. Complete excision and grafting was tried and proved very satisfactory.

British Medical Journal, London

2:163-236 (July 25) 1953

The Place of the Hospital in National Health Service. A. Daley.—p. 163.
Staphylococcal Infection of the Newborn. J. O. Forfar, C. L. Balf, T. F. Elias-Jones and P. N. Edmunds.—p. 170.
Study of Two Unusual Blood-Group Antigens in West Africans. J. N. N. Chalmers, E. W. Ikin and A. E. Mourant.—p. 175.
Use and Effectiveness of Antimalarial Drugs: Experience of Non-Native Resident Population of Nigeria, West Africa. B. M. Nicol.—p. 177.
Female Fertility. D. Llewellyn-Jones.—p. 180.
"Coliform Diarrhoea" in Adult Hospital Patients. W. McNaught and J. S. Stevenson.—p. 182.
Infected Urachal Cysts. H. I. Rees.—p. 184.
Lingual Thyroid. K. Sicher.—p. 186.

Deutsche medizinische Wochenschrift, Stuttgart

78:957-1004 (July 3) 1953. **Partial Index**

Spread of Poliomyelitis in Germany Since End of Second World War. A. Windorfer.—p. 957.
*Experiences of Practical Importance in 1952 Epidemic of Poliomyelitis in Essen. O. Hartmann.—p. 962.
Polycythemia and Cirrhosis of Liver. R. Schneider and M. Wolf.—p. 965.
Sporadic Occurrence of Lethargic Encephalitis (Economo's Disease). G. Wolf.—p 968.
*Thoughts on Hormone Therapy in Carcinoma of Prostate. G. Bornmann and A. Loeser.—p. 970.

1952 Epidemic of Poliomyelitis in Essen.—In 1952, 318 cases of poliomyelitis were observed in 255 children and in 63 adolescents and adults. The total mortality rate was 8.88%. In the different districts of the city, the mortality rate varied from none to 22.6%. Of the 318 patients, 8 were brothers and sisters ("fraternal cases") and 5 were children who had played together ("paired cases"). Close contact may play a part in the causation of the infection. Trauma in the widest sense of the word and overexertion are of definite importance during the incubation period, as was proved by the histories of 16 patients. Of 242 hospitalized children, 111 had a nonparalytic type of the disease. Of 126 paretic patients, 51 had an "ascending" type of paresis. Five children had primary polioencephalitis. The simultaneous presence of a high cell count and protein values in the cerebrospinal fluid suggests an unfavorable prognosis. In patients with these findings, a very rapid ascent of paresis was frequently observed. The bulbar types with much less pronounced findings in the cerebrospinal fluid have an unfavorable prognosis, if they are

associated with vasomotor weakness. Physical and mental strain should be avoided during the critical stage of the disease. Two cases of late paralysis were apparently caused by actions contrary to this rule. In one of these patients the exacerbation resulted from too early physical strain. Of 16 patients placed in a mechanical respirator, 11 died and 5 improved. The mechanical respirator is particularly indicated in patients with spinal respiratory paralysis, but not in patients with bulbar respiratory paralysis. Children who could not count further than six in one breath and who had dyspnea when resting and pulmonary roentgenologic manifestations were placed in the mechanical respirator. Temporary application of a mechanical respirator is recommended for patients in deep coma with superficial breathing. The "electrolung" proved beneficial as a preparatory treatment before taking the patient out of the mechanical respirator. It was also useful in the after treatment of paresis of the diaphragm and abdominal muscles.

Hormone Therapy of Carcinoma of Prostate.—Observations on women with cancer given large doses of male sex hormone and animal experiments in which the Fallopian tubes or the spermatic ducts were severed with resulting hypofunction of the thyroid, suggested the use of desiccated thyroid or thyroxin in patients with carcinoma of the prostate in addition to female sex hormones or synthetic substitutes. This idea is based on the concept that the effect of the sex hormone on the tumor tissue may thus be increased, while at the same time the untoward reactions, such as circulatory disturbances, lowered metabolism, reduced defense mechanism, and depressed state of mind due to thyroid deficiency, would be attenuated to a considerable degree.

Journal of Physiology, Cambridge

121:1-224 (July) 1953. **Partial Index**

Measurement of Volume Changes in Human Limbs. R. J. Whitney.—p. 1.
Diabetogenic Action of Purified Growth Hormone in Adrenalectomized Animals. M. F. Lockett, E. Reid and F. G. Young.—p. 28.
Renal Function and Excretion of Potassium in Acute Alkalosis. G. T. Franglen, E. McGarry and A. G. Spencer.—p. 35.
Response to Vasodilator Substances of Blood Vessels in Fingers Immersed in Cold Water. F. Duff, A. D. M. Greenfield, J. T. Shepherd and others.—p. 46.
Occurrence of Homologues of Acetylcholine in Ox Spleen. J. Banister, V. P. Whittaker and S. Wijesundera.—p. 55.
Density Flowmeter, Direct Method for Measurement of Rate of Blood Flow. G. S. Dawes, J. C. Mott and J. R. Vane.—p. 72.
New Perfusion Method. J. R. Vane.—p. 97.
Response of Pulmonary and Cardiovascular Vagal Receptors to Certain Drugs. A. S. Paintal.—p. 182.
Vasopressor and Oxytocic Activities of Pituitary Glands of Rats, Guinea-Pigs and Cats and of Human Foetuses. S. E. Dicker and C. Tyler. —p. 206.
Spread of Failure of Conduction in Degenerating Mammalian Nerve. G. Causey and C. J. Stratmann.—p. 215.

Lancet, London

2:209-260 (Aug. 1) 1953

*Idiopathic Thrombocytopenic Purpura: A Challenge. M. Stefanini and W. Dameshek.—p. 209.
Laboratory Techniques for Determination of Sensitivity of Tubercle Bacilli to Isoniazid, Streptomycin, and P.A.S.: (M.R.C. Isoniazid Trial: Report No. 3). Report by Laboratory Subcommittee of Tuberculosis Chemotherapy Trials Committee, Medical Research Council. —p. 213.
*Emergence of Bacterial Resistance in Pulmonary Tuberculosis Under Treatment with Isoniazid, Streptomycin Plus P.A.S., and Streptomycin Plus Isoniazid: (M.R.C. Isoniazid Trial: Report No. 4). Report by Laboratory Subcommittee of Tuberculous Chemotherapy Trials Committee, Medical Research Council.—p. 217.
Nature and Treatment of Coeliac-Plexus Reflex in Man. B. H. Smith. —p. 223.
Effect of Alkalis on Fasting Human Stomach. J. S. Staffurth.—p. 227.
Vasodilatation Produced by Experimental Arterial Gas Embolism in Man. E. Duff, A. D. M. Greenfield and R. F. Whelan.—p. 230.

Idiopathic Thrombocytopenic Purpura.—The authors' studies of idiopathic thrombocytopenic purpura suggest an immunologic concept of the condition, although other humeral mechanisms, perhaps emanating from the spleen, cannot be ruled out. How or why platelet antibodies (agglutinins), destructive to the patient's own platelets, are evolved is at present unsolved. It is known that platelets and their products are antigenic. This is demonstrated not only by the development of platelet agglutinins by laboratory animals receiving heterologous platelets but also by the presence of antiplatelet agents in the plasma of thrombocytopenic patients receiving multiple platelet transfusions. It is conceivable that bacterial and viral agents and other noxious factors may modify the structure of the platelet and confer on it autoantigenic properties. It is also possible that the autoagglutinin might be the end-result of faulty synthesis of protein by diseased organs. Autoimmune thrombocytopenia may be just as real as autoimmune hemolytic anemia. With this in mind one can present a tentative classification of idiopathic thrombocytopenic purpura that is compatible with the better documented one for hemolytic anemia, by distinguishing between an intrinsic abnormality due to hereditary or acquired factors and an extrinsic disturbance of bacterial or viral, autoimmune, or hypersplenic origin. An immediate result of the authors' studies has been emphasis of the necessity for the careful assessment of the clinical and laboratory features of each case of idiopathic thrombocytopenic purpura with particular reference to its acute or chronic nature. This has considerable bearing on the decision whether and, if so, when splenectomy should be done. Splenectomy is at present the only available treatment for chronic idiopathic thrombocytopenic purpura and is successful in about 60% of the cases. The hazard of the splenectomy is negligible with the aid of corticotropin therapy and platelet transfusions. Less practical, but theoretically important, has been the development of the concept that each case of idiopathic thrombocytopenic purpura, whether acute or chronic, may well be an individual syndrome in which many different pathogenic mechanisms play an undetermined part.

Bacterial Resistance in Pulmonary Tuberculosis Treated with Isoniazid.—Since February, 1952, a clinical trial of isoniazid by the British Medical Research Council has been in progress with more than 1,300 patients receiving treatment in 53 hospitals. As part of this therapeutic trial the development of bacterial resistance over a period of six months to isoniazid and to streptomycin was studied in three groups of patients; 264 patients were given isoniazid alone, 233 received streptomycin combined with *p*-aminosalicylic acid, and 130 streptomycin combined with isoniazid. The standard doses of the three drugs were: 100 mg. of isoniazid twice a day, 1 gm. of streptomycin daily, and 5 gm. of the sodium salt of *p*-aminosalicylic acid four times daily. After three months of treatment, only a proportion of patients continued with the original chemotherapy; for those who continued, the dose of streptomycin was reduced to 1 gm. 2 or 3 times a week. Treatment was determined by random allocation, and the clinical condition on admission of the three groups of patients was comparable. Bacillary resistance to isoniazid was observed in 64% of 132 positive cultures, representing 35% of the total number of patients on whom cultures were made. At six months 30 positive cultures were obtained from 48 patients, and 28 of the 30 cultures (93%) were resistant. The development of isoniazid resistance in patients treated with streptomycin combined with isoniazid was in clear contrast to that in patients treated with isoniazid alone, since by three months of treatment 11% of 28 positive cultures were resistant, and resistant strains had been isolated from 2% of all patients treated with streptomycin combined with isoniazid as compared with 64% and 35%, respectively, for patients treated with isoniazid alone. At six months of treatment two of only four positive cultures (50%) were resistant, and these two resistant strains were obtained from a total of 58 patients for whom cultures were made (3%). For three months after treatment with isoniazid was discontinued there was no evidence of any general reversion of isoniazid-resistant strains either to a lower level of resistance or to sensitivity. For six months, streptomycin combined with isoniazid was as effective as streptomycin combined with *p*-aminosalicylic acid in preventing the emergence of strains resistant to streptomycin. On streptomycin combined with isoniazid 8% of positive cultures were streptomycin-resistant at three months and none of four at six months; on streptomycin combined with *p*-aminosalicylic acid the corresponding figures were 6% and 29% (two of

seven). Patients with organisms initially resistant to *p*-aminosalicylic acid were not protected from the risk of development of streptomycin resistance by treatment with streptomycin combined with *p*-aminosalicylic acid.

Medical Journal of Australia, Sydney

1:869-904 (June 20) 1953. **Partial Index**

Early Diagnosis of Cervical Carcinoma with Special Reference to General Practice. R. F. Matters.—p. 874.
Anterior Dislocation of Shoulder: Reduction by "Hanging-Arm" Technique. G. Kerridge.—p. 882.
Development of Isonicotinic Acid-Hydrazide Resistance in Mycobacterium Tuberculosis: Preliminary Publication. J. S. Incze.—p. 883.
Complicated Aneurysmal Varix of Femoral Artery Treated by Arterial Suture. J. T. Hueston.—p. 886.
Canicola Fever in Australia. C. N. Sinnamon, V. M. Pask, D. J. W. Smith and others.—p. 887.

Münchener medizinische Wochenschrift, Munich

95:741-764 (July 3) 1953. **Partial Index**

Nil nocere!: Errors in Obstetrics. A. Mayer.—p. 741.
Coxsackie Virus Infections in Childhood. U. K. Petersen.—p. 743.
Clinical Forms of Parkinsonism in Their Relationships to Pathological Anatomy. G. Heilig.—p. 747.
Artificial Respiration in Iron Lung; Report on Experience with 105 Patients with Poliomyelitis Associated with Respiratory Paralysis Between 1947 and 1952. R. Aschenbrenner, A. Dönhardt and K. Foth.—p. 748.
*Sleep Therapy in Poliomyelitis: Attempted Prophylaxis of Paralysis with Sedatives. T. Brehme and W. Leuterer.—p. 751.

Sleep Therapy in Poliomyelitis.—Brehme and Leuterer emphasize the great importance of rest at the time of the first signs arousing suspicion of poliomyelitis or the first definite symptoms of the disease to prevent severe histochemical alterations, such as chromatolysis and loss of proteins and ribose nucleotides in the physiologically active ganglion cells. The destructive effect of the poliomyelitis virus is much more deleterious in the active, stimulated or fatigued cell than to the ganglion cell at rest. Strict rest in bed, particularly in the preparalytic stage, is imperative and should be made more effective by the administration of sedatives. Of 55 children with the premonitory meningitic signs and with positive findings in the cerebrospinal fluid and of additional 10 patients with adynamia, mild disturbances of innervation or reflex disturbances but with maintained motility, 39 received sleep therapy and 26 did not. The depth of sleep was so regulated that the children always could be awakened. The children were kept in a quiet, dark room. Transition from preparalysis to paralysis occurred in 4 of the 39 treated and in 5 of 26 untreated patients, a ratio of one-fifth in the untreated as compared to one-ninth in the treated. Because of the small number of cases this difference may not be statistically significant, but it has at least a certain "probability value." With respect to the course of the paralysis during the acute phase, 4 of 24 untreated children were improved, 13 were unchanged, and 7 became worse; 9 of 23 treated children were improved, 12 were unchanged, and 2 became worse. Control therapeutic trials by many observers on large alternating numbers of patients are suggested.

Nordisk Medicin, Stockholm

49:831-860 (June 12) 1953. **Partial Index**

Transvestitism (Eonism): Hormonal, Psychiatric and Surgical Treatment of Case. C. Hamburger, K. Stürup and E. Dahl-Iversen.—p. 844.
*Prefrontal Lobotomy: After-Examination of 125 Patients. J. Kryger and N. A. Thorn.—p. 848.

Prefrontal Lobotomy: Follow-Up of 125 Patients.—Prefrontal lobotomy according to Freeman and Watts' standard method was done between 1943 and 1951 in 125 patients from 16 to 78 years of age. The results did not equal those reported by Freeman and Watts; 2.5% were socially reinstated, 18% were discharged, and 38% were more easily managed. Kryger and Thorn stress the importance of psychiatric follow-up for the best development of the possibilities created by the intervention and ascribe their less satisfactory results to the lack of highly trained personnel to provide adequate psychiatric follow-up.

Philippine Medical Association Journal, Manila

29:199-272 (May) 1953. **Partial Index**

Maternal Morbidity and Mortality in Philippine General Hospital, from July 1, 1945, to December 31, 1951. H. A. Sison.—p. 199.
Health is our Wealth. J. Salcedo Jr.—p. 212.
Medicine in Philippines. V. A. Tan.—p. 218.
The Philippine Medical Association. A. S. Fernando.—p. 223.
Medical Problems Ahead. A. S. Fernando.—p. 236.

29:273-320 (June) 1953

Case Report on Agnogenic Lymphoid Metaplasia of Spleen. A. G. Sison, E. Stransky, J. Silva and others.—p. 273.
Further Contribution to New Type of Hemolytic Anemia: (Stransky-Regala-Type). E. Stransky.—p. 282.
Hair Concretions Seen in the Philippines. S. A. Simuangco.—p. 285.

Practitioner, London

171:1-116 (July) 1953. **Partial Index**

Neurotropic Viruses: With Particular Reference to Poliomyelitis. A. J. Steigman.—p. 5.
Parkinsonism and Its Management. H. Miller.—p. 15.
Cerebral Palsy in Childhood. W. S. Craig.—p. 21.
Intractable Pain. W. McKissock.—p. 34.
Trigeminal Neuralgia. N. G. Hulbert.—p. 40.
Occupational Diseases with Neurological Symptoms and Signs. D. Hunter. —p. 48.
Biological Approach to Psychology. R. J. S. McDowall.—p. 59.

Presse Médicale, Paris

61:941-958 (June 27) 1953

Treatment of Basedow's Disease with Radioactive Iodine. Gilbert-Dreyfus, Ambrosino, Zara and Triantaphyllidis.—p. 941.
*Radiological Aspects of Lesions of Pulmonary Tuberculosis Treated with Streptomycin. L. Dubarry.—p. 943.
Note on Certain Aspects of Pharmacodynamic Action of Adrenochrome Monosemicarbazone (A.M.S.C.). M. Bagros, J. Marcovici and S. Despax.—p. 945.
Epidemic Hemorrhagic Fever in Korea. A. Plichet.—p. 946.

Radiological Aspects of Pulmonary Tuberculous Lesions Treated with Streptomycin.—Radiological examination is a reliable guide to the use of streptomycin in several forms of pulmonary tuberculosis, but not in all. Radiographs sometimes show improvement in apical and cavitary lesions, while cultures remain positive. Therapeutic indications in such cases are hard to determine, and the increased well-being of the patient makes him reluctant to submit to collapse therapy. In two of the author's patients, however, cultures that had been persistently positive after streptomycin therapy in spite of apparently normal lung pictures promptly became negative when a pneumothorax was instituted. Bacteriological examination thus becomes of paramount importance in evaluating the effects of treatment in patients showing radiological improvement after the administration of streptomycin. Similar problems are apt to arise in connection with the use of other antibiotics. Permanent closure of cavities is sometimes, though rarely, secured by antibiotic therapy. Elderly patients and those in poor general condition (e. g., alcoholics) for whom surgical treatment may be dangerous should, therefore, be given streptomycin, the efficacy of which is not reduced by advanced age or chronic alcoholism provided the cavities are not unduly old or large.

Proceedings of Royal Society of Medicine, London

46:407-472 (June) 1953. **Partial Index**

Diverticulitis. O. V. Lloyd-Davies.—p. 407.
Infantile Hemiplegia. W. McKissock.—p. 431.
Management of Tuberculous Bacilluria. J. C. Ross.—p. 434.
Steatorrhoea in Oesophago-Gastric Surgical Practice. R. H. F. Brain. —p. 438.
*Radioactive Gold in Malignant Effusions. J. Walter.—p. 466.

Radioactive Gold in Malignant Effusions.—Walter records his experience in attempting to control the reaccumulation of malignant exudates in the abdominal and thoracic cavities by radioactive gold. The radioactive gold, Au^{198}, is used in the colloidal form. The administration was by means of funnel and tubing. After the injection, the wound is sealed with collodion and gauze, and the patient is rotated, first on one side, then on the other, then head down, and then on his face, so as to distribute the radioactive fluid as uniformly

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as possible throughout the cavity. These turning maneuvers are continued at intervals in the ward for the next two hours. Later on the same day, a physical survey of the patient is made, with a Geiger counter, and the distribution of radioactivity is charted. There is always the possibility of finding a "hot-spot" due to loculated fluid that might lead to dangerously high local dosage; in this case, it might be judged advisable to withdraw radioactive fluid. Only one case has given anxiety in this way, but a repeat survey half a day later showed that the distribution had evened itself. Radiation reactions were mild. In 6 of 16 intraperitoneal injections, some abdominal pain with vomiting or diarrhea developed. Of four patients receiving intrathoracic injections, one had some pain. These reactions were never severe. In 8 of 15 patients who received the radioactive gold intraperitoneally no worth-while clinical effect was obtained, and 5 died within a short time. In four of the eight, considerable masses were palpable in pelvis or abdomen; it seems logical to expect poor results from a superficial form of treatment in such cases. In the seven cases in which a measure of success was achieved, reaccumulation of fluid has been controlled for periods of from 2 to 13 months so far. Control was achieved in only one of the four thoracic cases. The author suggests that radioactive gold might be used prophylactically in cases in which malignant cells are accidentally spilled at operation, as in cases of rupture of an ovarian cyst. Radioactive gold instilled intraperitoneally at the end of operation, or soon after, might have a decisive effect in eliminating early seedlings. He observed a case in which a little pseudomyxomatous jelly was found in the pouch of Douglas; 135 mc. of radioactive gold were instilled, and there has been no clinical recurrence for nearly two years.

Rev. Asociación Médica Argentina, Buenos Aires

67:89-134 (April 15-30) 1953. **Partial Index**

Pneumoconiosis: I. Clinical Study in Relation to Functional Examination of Respiratory Tract; II. Experimental Pathology of Pneumoconiosis; and III. Pretended Protective Action of Aluminium in Preventing Pulmonary Silicosis. E. A. Pedace, A. E. Bachmann and M. S. Dreyer.—p. 89.

*Lack of Deferent Ducts: Four Cases. A. Trabucco and E. B. Bottini.—p. 118.

Lack of Deferent Ducts.—Of 400 men with azoospermia, 4 (1%) were found to have a congenital lack of the deferent ducts. These men were between the ages of 31 and 42 and complained of conjugal sterility. Together with total lack of deferent ducts, there was a total or a partial lack of the epididymis and, frequently, absence of the seminal vesicles. The posterior urethra and the verumontanum were normal. The diagnosis was suggested by a total azoospermia in the presence of normal size testes. The spermatogenesis is normal, as shown by a biopsy. There is no epididymis. The amount of semen eliminated varies between 0.5 and 1.5 cc. The diagnosis is verified by surgery. The four cases of this report are the only ones in the literature in which the abnormality was discovered while attempting to cure conjugal sterility of the patients. In the cases reported in the literature, the frequency of the abnormality is 0.5%, and the abnormality was observed during attempts of ligation of the deferent ducts for the purpose of either sterilizing the patients or preventing epididymal infection after endoscopic prostatectomy

Schweizerische medizinische Wochenschrift, Basel

83:667-686 (July 18) 1953. **Partial Index**

Some Actual Problems of Accident Medicine in the Field of Ophthalmology, Based on Experiences of the Swiss Accident Insurance Institute. F. Lang and J. Schürmann.—p. 667.

*Tuberculosis of Tonsils and Tuberculous Lymphoma of Neck. G. E. Stiefel.—p. 671.

*Experimental Contribution to Thrombin Therapy of Acute Gastric Hemorrhage. C. Usteri, M. Matter and F. Koller.—p. 674.

Tuberculosis of Tonsils.—Between 1941 and 1950, the tonsils were removed from 9,294 patients admitted to the Canton Hospital in St. Gallen, Switzerland. Microscopic examination of the removed specimens revealed unilateral or bilateral tuberculosis of the palatine tonsils in 240 patients, tuberculosis of the pharyngeal tonsils in 5, and tuberculosis of all three tonsils in 8, a total incidence of 253 (2.74%). In 410 of the 9,294 patients, clinical signs of unilateral or bilateral tuberculosis of the lymph nodes of the neck were observed at the time of the tonsillectomy, and three additional patients had open pulmonary tuberculosis. In these three and in 145 of the 410 patients, at least one of the tonsils was affected by tuberculosis. In the remaining 8,881 patients, tuberculosis was observed by chance in 105. Thus of the 253 (148 + 105) patients tuberculosis of tonsils occurred in three-fifths of patients with cervical lymphoma and in two-fifths of the patients without any clinical sign of tuberculosis. Routine examination of all removed tonsils for tuberculosis is suggested by these impressive data. Of the 253 patients with tuberculosis of the tonsils, 100 (39.2%) were males and 153 (60.8%) were females. The average age of the male patients was 15 years, and of the female patients 20 years. Of 117 patients with tuberculosis of the tonsils to whom a questionnaire could be sent 5 to 10 years after their tonsillectomies, an answer was received from 107. Eight (7.5%) of these 107 had tuberculosis. Exacerbation of the tuberculosis did not occur after the tonsillectomy in any of the patients. Sixty-six of the 107 patients had a cervical lymphoma at the time of the tonsillectomy, and in 18 a cure was obtained without any treatment in addition to tonsillectomy. In the remaining patients puncture or excision of the lymphoma was required, and in some the pharyngeal tonsils, which had been likewise infected by tuberculosis and had not been removed, acted as foci of dissemination. High altitude or sanatorium treatment before or after the tonsillectomy did not have any significant effect on the tendency to recovery in the patients with cervical lymphoma. Radical removal of the palatine, and if possible also of the pharyngeal tonsils, is indicated as a first step in the treatment of cervical lymphoma. Excision of the lymph nodes is necessary only in those patients who do not show any or only unsatisfactory tendency to regression. In patients with uncomplicated tuberculosis of the tonsils, high altitude treatment after tonsillectomy is not necessary.

Thrombin Therapy for Acute Gastric Hemorrhage.—To study the conditions of blood coagulation in the gastric juice of man, first a sample of gastric juice was examined which had been obtained by fractionated removal with a tube of the gastric contents from the stomach of patients in whom this procedure was carried out for diagnostic purposes. The same patients then were given a 2.5% Topostasin solution (5 gm. in 200 cc. of water), while the stomach tube was left in place. Topostasin is a proprietary preparation of dried thrombin obtained from cattle plasma with an addition of a phosphate buffer mixture and gelatin. Five grams of this preparation correspond to 1,500 NIH units of thrombin. The Topostasin containing gastric juice then was removed by tube 5, 10, and up to 60 minutes after the administration of the Topostasin solution. The coagulation activity of these various samples of gastric juice was tested by the addition of 0.2 cc. of a 500 mg. per 100 cc. of fibrinogen solution. In additional experiments the pH was determined by colorimetric method in other samples of the Topostasin containing gastric juice. Blood was aspirated with a graduated syringe from a vein of the patient's upper extremity and added to the various samples of the gastric juice. After mixing of blood and gastric juice the coagulation time was determined. In a control experiment the coagulation time was determined in a mixture of 0.5 cc. of sodium chloride solution and 0.5 cc. of blood. In a final series of experiments the blood coagulation in the gastric juice was determined before and after the oral administration of phosphate buffer mixture, the Topostasin solution, and milk. Results showed that blood coagulation is considerably delayed or even impossible in gastric juice of normal acidity and particularly of hyperacidity associated with ulcer. By ingestion of milk or phosphate buffer the pH of the gastric juice is shifted towards the neutral point, and thus the blood coagulation is favored. Blood coagulation occurs most rapidly if thrombin combined with phosphate buffer (in the form of Topostasin) is administered. The effect of the thrombin-phosphate buffer mixture on coagulation continues up to one hour. Repeated ingestion of this mixture (alternating with milk) is most effective for blood coagulation and, therefore, hemostasis in acute gastric hemorrhage.

BOOK REVIEWS

Ophthalmologic Diagnosis. By F. Herbert Haessler, M.D., Professor of Division of Ophthalmology, Marquette University School of Medicine, Milwaukee. Cloth. $8. Pp. 387, with 151 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1953.

This new work presents a unique approach to ocular diagnosis. It could not serve as the sole textbook for an undergraduate student, since treatment is ignored, but, for the postgraduate student or resident in ophthalmology, there is served in palatable form a well-written and most informative treatise on the art of diagnosis, with many suggestions that should prove invaluable. Unlike most modern textbooks, it has no photographs or classical illustrations and has only a few diagrammatic drawings. In no sense a catalog of all known ophthalmological diseases, it is truly a "clear and concise road map to ophthalmology." In masterful fashion the author presents a philosophy of diagnosis that should be entertaining and instructive to the trained ophthalmologist as well as to the novice. The first few chapters contain a rather brief survey of fundamental principles that are elaborated on in subsequent chapters. The advantage of dividing the material in this manner is debatable, since it makes for some repetition. There has been, however, no casual compilation of chapters; there was a carefully considered plan. The material is accurate, and the volume can be highly recommended to anyone concerned with ophthalmologic diagnosis.

Natural History of Infectious Disease. By Sir Macfarlane Burnet, M.D., F.R.S., Director of Walter and Eliza Hall Institute, Melbourne. Second edition. Cloth. $4.50. Pp. 356, with 13 illustrations. Cambridge University Press, 32 E. 57th St., New York 22; Bentley House, 200 Euston Rd., London, N.W.1, 1953.

In this edition, the author recognizes and recounts the revolution that has occurred in the problems of infectious disease since the book was first written 20 years ago. The material presented is divided into five general parts. The first part deals with biological considerations, the second with the infecting microbes, and the third with defense mechanisms, including the chemical as well as the cellular basis for immunity. The fourth section considers the epidemiological factors, including the control of infectious disease, and the fifth section is concerned with some of the important infectious diseases. This is truly a remarkable book of its kind. The author has the ability to present complex subject matter with refreshing simplicity. Although this is not a reference or a textbook, any student who is beginning a course in bacteriology would do well to read it, and anyone who is interested in infectious diseases will find it valuable.

Ballistocardiography: The Application of the Direct Ballistocardiograph to Clinical Medicine. By William Dock, B.S., M.D., F.A.C.P., Professor of Medicine, State University Medical Center at New York City, Harry Mandelbaum, M.D., F.A.C.P., Associate in Medicine, Jewish Hospital of Brooklyn, Brooklyn, N. Y., and Robert A. Mandelbaum, B.A., M.D., Assistant in Medicine, Jewish Hospital of Brooklyn. Cloth. $9.50. Pp. 293, with 153 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1953.

This concisely written monograph on ballistocardiography by a group that has pioneered the use of a simple, velocity-type, portable ballistocardiograph is most welcome, because there is still considerable controversy and confusion on this subject. Since 1948, the authors have made numerous ballistocardiograms on normal and abnormal subjects under a variety of different circumstances. They have accumulated sufficient data to make possible some general statements on the value of the ballistocardiogram in diagnosis and prognosis. In interpreting the ballistocardiogram, the authors indicate the necessity of considering the ballistocardiogram as only part of a medical examination. The following quotation from page 103 points out the fallacy of making a diagnosis from the ballistocardiogram alone: "Trivial and transient disturbances of the circulation may produce abnormal tracings; severe heart disease, especially when diastolic pressure is low, may be present with normal tracings of low amplitude. If an expert, on the basis of tracings alone, even hints that the myocardium is diseased or is healthy, he is not helping the physician who refers the case and he may be harming the patient."

No previous knowledge of the subject is assumed, so the entire field of ballistocardiography is covered, from a discussion of physical and physiological principles to its application in disease. There is also a chapter relating the results of the authors' investigations on the effect of smoking on the ballistocardiogram. Many excellent illustrations supplement a well-written text. This is one of the best monographs so far published on ballistocardiography. It should be an extremely useful reference book not only for the cardiologist but for any physician who has the desire to learn about this new and interesting diagnostic aid.

The Action of Insulin. By Niels Haugaard, Ph.D., Assistant Professor of Physiological Chemistry in Research Medicine, School of Medicine, University of Pennsylvania, Philadelphia, and Julian B. Marsh, M.D., Assistant Professor of Physiological Chemistry, Graduate School of Medicine, University of Pennsylvania. Publication number 194, American Lecture Series, monograph in American Lectures in Endocrinology, edited by Willard O. Thompson, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine, Chicago. Cloth. $3.75. Pp. 113, with 8 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1953.

This new monograph with an introductory chapter by Dr. William C. Stadie presents an excellent summary of the problematic concepts and known facts regarding the properties and action of insulin. The nature and probable pathways of intermediary metabolic reactions that are involved are concisely reviewed along with the chemistry of the hormone and its physiological action. The relationships encountered in experimental diabetes and the influence of other hormones on the action of insulin are carefully outlined. Certain speculative clinical aspects of its action are included. The final chapter deals with a discussion of what is known and what is unknown concerning the biochemical mechanism of insulin action on cellular metabolism. Each chapter except the first is followed by a list of references, which are annotated in the text. A general index is placed at the end. The printing and flexible binding are appropriate for a book of monograph size. No typographic errors were found. The book will be useful to all advanced students and investigators interested in the action of hormones in general and that of insulin in particular.

Elsevier's Encyclopædia of Organic Chemistry. Series III: Carbolsocyclic Condensed Compounds. Volume 12B: Naphthalene. A. Compounds Containing One Naphthalene Nucleus: Carboxylic Acids (CO_2H in Side Chain). Founded by E. Josephy & F. Radt. Edited by F. Radt. Cloth. $66; $58 to series subscribers; $50 to set subscribers. Pp. 3261-3963. Elsevier Press, Inc., 402 Lovett Blvd., Houston 6; 155 E. 82nd St., New York 28; 118 Spuistraat, Amsterdam C, Netherlands; Cleaver-Hume Press, Ltd., 42A S. Audley St., London, W.1, 1953.

This volume in this extensive and important chemical series covers the carboxylic acids that contain the naphthalene skeleton. Such better-known compounds as the naphthylacetic acids, santonin, carboxylic acid derivatives of decalin, and tetralone are included in a host of organic compounds that are lesser known (to the physician). Wherever possible, data are given concerning the physiological and biological properties of these substances. The literature through 1944 and the structure of compounds as determined up to the beginning of 1953 are included.

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

Diseases of the Digestive System. Edited by Sidney A. Portis, B.S., M.D., F.A.C.P., Associate Clinical Professor of Medicine, University of Illinois Medical School, Chicago. Third edition. Cloth. $20. Pp. 1119, with 274 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1953.

Knowledge of the digestive tract and its functional and organic disorders has advanced greatly in the last decade. Refined methods of study have clarified much of the darkness that surrounded the physiology and pathology of the system. An appraisal of the various disorders arising in the digestive canal requires a review of a vast amount of important literature that reflects the opinions of a large body of experienced observers.

This edition contains the contributions of 57 acknowledged authorities and reflects the increasing emphasis given to psychodynamics and the psychogenesis of gastrointestinal disorders. The order of the book follows a logical progression. Following a historical review, charts on the anatomy and physiology of the digestive system include recent advances in the dynamics of digestion. Particularly worthy are the discussions on the neurological aspects and consideration of the emotional factors that underlie the majority of everyday digestive complaints. Chapters on allergy, the anemias, and a résumé of dietetic concepts represent modern interpretations. After a well-documented section on roentgenology, chapters on the disorders of the various parts of the system, from the mouth to the anus, are presented by recognized authorities. The chapter on peptic ulcer by Palmer is especially noteworthy because of its broad, yet detailed, consideration of this disorder of modern civilization. The discussion of diseases of the extrahepatic biliary passages and the one on diseases of the liver by Portis stand high in the current literature regarding the gastrointestinal tract.

The last seven chapters deal with gastrointestinal manifestations of other diseases, including arthritis, with disorders of the endocrine system and the relationship between the gastrointestinal and cardiovascular systems. Two chapters by Leiter on alkalosis and renal disease are excellent. This volume has only a brief reference to esophageal varices, a condition that is appearing with distressing frequency. The clinical picture of a bleeding varix may baffle the attending physician as a diagnostic challenge, and the difficulty of finding an adequate solution for the control of bleeding may distress him even more.

There can never be any substitute for a careful and logical record of the patient's disorder. The trend in teaching today tends to emphasize technical procedures with insufficient attention to the patient as a whole. A chapter on the art of taking a history and the technique of carrying out a physical examination would be a helpful addition to this book. This edition, edited by Portis, is a classic. The interests of the patient will be greatly served and much time will be saved for the specialist, the general practitioner, and the student if they have within easy reach a copy of this superb presentation.

British Pharmacopœia 1953. Published under direction of General Medical Council pursuant to Medical Council Act 1862 and Medical Act 1950. Official from 1 September 1953. [Eighth edition]. Cloth. 50s. Pp. 894, with 12 illustrations. Published for General Medical Council by Pharmaceutical Press, 17 Bloomsbury Sq., London, W.C.1, [1953].

The latest edition of the British Pharmacopeia, which became official Sept. 1, 1953, is unquestionably an improvement over previous editions. For the first time English has been substituted for Latin in the main titles of the monographs. The various dosage forms of a basic drug are all listed in sequence. Thus tablets of digoxin appear immediately after digoxin instead of being grouped with all other tablets of official substances. Usual doses are given in metric units, with the apothecary equivalents indicated only for older drugs. The 150 deletions are composed largely of botanicals that are difficult to standardize and have been largely supplanted by other newer drugs. Ergot has been deleted, but ergometrine maleate and ergotamine tartrate have been added. Other deletions involve agents that have been replaced by less dangerous drugs. There is a total of 62 newly admitted substances.

Less striking on casual inspection, but significant, are the changes in monographs for substances in the 1948 edition. For instance, assays have been added in many cases. Molecular weights were recalculated from the 1951 Atomic Weight Table. The appendix on biological assays and tests presents the biometrical principles of assay, with descriptions of the designs of assay for various official substances. In the introductory section there is a list comparing the titles of monographs in the B. P. and the titles for the corresponding drugs in the International Pharmacopeia, first edition, volume 1.

Differential Diagnosis of Common Diseases of the Eyeground. By Paul Tower, M.D. Cloth. $10. Pp. 243, with 129 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1953.

This book consists primarily of an atlas of fundus photographs, with accompanying chapters elaborating on the differential diagnosis of various changes in the fundus oculi and some discussion of the literature dealing with these changes. The illustrations are black and white, and therefore frequently fail to convey to the inexperienced or beginning ophthalmologist an accurate concept of the true appearance of the pathological fundus. The text is for the most part satisfactory, and the illustrations are adequate in number. To one with some training in ophthalmoscopy, the book should prove useful.

Encyclopedia of Chemical Technology. Volume 10: Pentacene to Polymethine Dyes. Edited by Raymond E. Kirk, Head, Department of Chemistry, Polytechnic Institute of Brooklyn, Brooklyn, N. Y., and Donald F. Othmer, Head, Department of Chemical Engineering, Polytechnic Institute of Brooklyn. Assistant editors: Janet D. Scott and Anthony Standen. Cloth. Subscr. price, $25 per volume. Pp. 976, with illustrations. Interscience Publishers, Inc., 250 Fifth Ave., New York 1; 2a Southampton Row, London, W.C.1, 1953.

THE JOURNAL reviews of the first nine volumes have indicated the interest that this encyclopedia holds for physicians, although it is primarily concerned with chemical technology. The articles, even of the most technical nature, are clearly but briefly expressed. Of particular interest to the physician are discussions on perfumes, peroxides, petroleum (composition, origin, refinery processes, products, chemicals, and waxes), pharmaceuticals (product forms, research, process development, manufacturing, control, and new product development) phenols, phenolic resins and plastics, phenolphthalein, phenylenediamines, phosgene, phosphorus and phosphorous compounds, photochemistry, photoelectric cells, photography, inorganic and organic pigments, plant growth substances, plasma expanders, plasticizers, plywood, economic poisons, polyethylene, and polymers. Many other subjects are presented that may not be of such general interest to the physician, but, if he wishes to know something about allied technical fields, there is no better reference source than this encyclopedia.

Die Wissenschaft vom Traum: Ergebnisse und Probleme. Eine Einführung in die allgemeinen Grundlagen. Von W. v. Siebenthal. Mit einem Vorwort von Victor Emil Freiherr von Gebsattel. Cloth. 39.60 marks. Pp. 523, with 3 illustrations. Springer-Verlag, Reichpietschufer 20, (1) Berlin W. 35 (West-Berlin); Neuenheimer Landstrasse 24, Heidelberg; Göttingen, 1953.

Extremely well written, and fortified with 1,309 references to previous publications, this book summarizes almost everything of interest that has been written about dreams from the time of Joseph and the Pharaohs to Freud and Jung. Concerned with dreams as manifesting the experiences and aspirations of the dreamer, it should be useful in libraries devoted to psychoanalysis. The word *Wissenschaft* in the title, however, invites evaluation of the book as a work of science. In 10 lines on page 151 the author dismisses statistical methods as having limited value. Kinsey and others who have contributed substantially to the important literature on nocturnal emissions are not mentioned, and, in general, the space given to the data of experimental and physiological psychology is scanty. This book exemplifies the "preoccupation with superficially acceptable conclusions" pointed out recently by Altschule as the bane of psychiatry, and it places the present work low on the scale of scientific writing. As Altschule says, "A thoroughly sound psychiatry cannot develop until all men working in it take for granted that accumulation of valid data is of primary importance."

Histochemistry: Theoretical and Applied. By A. G. Everson Pearse, M.A., M.D., D.C.P. Cloth. $12. Pp. 530, with 113 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6; J. & A. Churchill, Ltd., 104 Gloucester Pl., London, W.1, 1953.

Pathologists and other scientists who study animal tissues will be pleased with this book. It is the first important work in its field since 1949; it is logically organized, beautifully written and printed, well illustrated, and thoroughly indexed.

In the preface, the author states that the book "deals solely . . . with theoretical and practical aspects of microscopical histochemistry. I decided, at the outset, to practice all the available methods in the various fields and to modify or reject those which proved useless. . . . For each method I have provided full theoretical details and sufficient critical comments to make clear its essential purpose and range of usefulness. . . . For the methods themselves . . . . [there are] technical appendices to each chapter so that the whole appendix forms a complete . . . unit." A sketch of the historical development of histochemistry from 1800 to 1952, a discussion of the chemistry of tissue fixation, and a chapter on freeze-drying technique are included. Several chapters are concerned with the identification in body tissues of such chemical constituents as proteins, nucleoproteins and amino acids, carbohydrates, lipids and lipoproteins, aldehydes and ketones, pigments, and certain inorganic constituents. Five chapters are devoted to the identification of enzymes and enzyme substrates, and a final chapter deals with physical methods of determination of tissue components. The appendix, containing directions for performing the various tests, is 80 pages long. The book can be highly recommended as a text for medical students.

The Normal Child: Some Problems of the First Three Years and Their Treatment. By Ronald S. Illingworth, M.D., F.R.C.P., D.P.H., Professor of Child Health, University of Sheffield, England. Cloth. $6. Pp. 342, with 64 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6; J. & A. Churchill, Ltd., 104 Gloucester Pl., London, W.1, 1953.

This book is written by an English author with considerable background of practical experience of child study and child care in the United States as well as England. The purpose of the text is to describe the physical and developmental variations that may occur in the normally progressing child. The author stresses the importance of recognizing the considerable latitude of normalcy and the need to recognize the boundary between this and disease. There is no discussion of disease conditions of this age period.

The book is divided into four sections covering problems of feeding, of physical and developmental growth, and of behavior. The section on breast feeding is particularly thorough, with consideration of the many problems incident to initiating and maintaining this desirable method of infant feeding. Perhaps the most valuable portion of the book for factual reference is in the sections on the phases of development, where the influence of the author's association with Gesell is strongly apparent. Less extensive coverage is given the numerous disturbing but normally encountered behavior problems that are to be expected in the process of growing up. Frequent references from an extensive bibliography are included, along with treatment recommendations based on the author's own considerable practical experience. This book appears particularly useful as a handy reference on developmental appraisal and minor problems for those concerned with children of this early age period.

Nursing of Children. By Gladys Sellew, B.S., R.N., Ph.D., Professor and Chairman of Department of Sociology and Social Work, Rosary College, River Forest, Illinois, and Mary F. Pepper, A.B., R.N., M.S.N.E., Educational Director, Christ Child Home for Convalescent Children, Washington, D. C. Seventh edition. Cloth. $3.75. Pp. 349, with 60 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1953.

The sixth edition of this work has been completely rewritten with a view to providing a different approach in the presentation of material. Where, formerly, material was arranged according to diseases affecting each body system, this book introduces pediatric nursing with a study of the normal growth and development of the child, followed by a discussion of the diseases common to different age groups through adolescence. This approach facilitates the adaptation of nursing care to the need of patient. Part 1, "Social Psychology of Childhood," includes chapters on the history of pediatric nursing, the child in the family and the community, and normal growth and development during the periods from infancy through adolescence, and part 2, "Illness in Infancy and Childhood," deals with general pediatric nursing procedures as well as patient care in specific diseases. Chapters are included on recreation and the nurse's role in the admission of a child to the hospital. Lists of references are given for the various sections.

This new approach to the subject of pediatric nursing is an excellent means of orientation, because it deals in fundamentals. Although the subjects in this small book are not discussed in great detail, a pattern is set in which all aspects of pediatric nursing are viewed in their proper perspective. It should be a particularly effective introductory text for students in pediatric nursing.

Effective Use of Older Workers. By Elizabeth Llewellyn Breckinridge, Executive Secretary, Illinois Committee on Aging. Foreword by Edward L. Ryerson, Chairman, Inland Steel Company, Chicago. With special contributions by Elizabeth Hatch, Curtis Gallenbeck, L. S. Barrus, and John Bromer. Cloth. $4. Pp. 224. Wilcox and Follett Co., 1255 S. Wabash, Chicago 5, 1953.

This book reports the findings of a national survey of corporate practice and thinking relating to the better use of our aging work force. The study was directed by Elizabeth L. Breckinridge under the supervision of the Committee on Human Development at the University of Chicago and was financed by a grant from the Rockefeller Foundation. The purpose of the survey was "to explore (1) the way in which some companies were using older workers more effectively than the average employer and (2) the procedures being devised to facilitate retirement and subsequent adjustment." Ninety companies, ranging from great corporations like General Motors and Standard Oil down to small shop operations, cooperated in supplying the information contained in this book. The author has arranged her material into a clear and pleasant narrative dealing successively with hiring, retiring, placement, counseling, maintenance of health and morale, preparation for retirement, and postretirement programs.

Throughout the report, the integral and significant role of the company medical officer is referred to again and again. His relationship to other departments of the company in building a program for older employees and pensioners is thoughtfully considered. In the section discussing health maintenance for the aging worker it is clear that we are merely at the beginning of a new attitude toward the older worker. Corporations are feeling their way and experimenting with pilot plant operations in this field. Nevertheless, from the data available, the author has been able to formulate some basic principles for programing company health services for this group of workers. Other attractive features of this report include several contributed papers from industrial relations executives and a good selected bibliography for those wishing additional information. This book is recommended reading for those interested in industrial medical programs, personnel work, and industrial relations.

Mechanisms of Urologic Disease. By David M. Davis, M.D. Cloth. $4.50. Pp. 156, with 6 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1953.

This readable little volume gives a bird's-eye view of urologic problems with emphasis on the physiological processes and pathological changes involved. In contrast to most treatises on urology, instead of dividing the subjects on an anatomic basis, the author appropriately treats the subjects on the basis of eight different types of pathological changes. In emphasizing physiological and pathological features, he stresses the results of obstruction in the urinary tract. In fact, the chapter on obstruction is the most valuable contribution in the book.

Whether or not the results of obstruction are as influential in involving all of the various diseases in the urinary tract as the author claims might be open to question, but the importance of obstruction in the field of urodynamics is quite evident, and his treatment of the subject is very interesting. Although the subsequent chapters are too brief for serious consideration, they offer a fair review of the subjects involved. The list of references, while adequate for the purpose, is somewhat insular and includes only comparatively recent references on the various subjects discussed. Although the treatise is meant chiefly for "beginners and for those physicians who are not urologic specialists," every urologist will find it interesting reading.

Slipped Capital Femoral Epiphysis. By Armin Klein, M.D., Robert J. Joplin, M.D., John A. Reidy, M.D., and Joseph Hanelin, M.D. Publication number 153, American Lecture Series, monograph in American Lectures in Roentgen Diagnosis. Edited by Aubrey O. Hampton, M.D., Chief, Department of Radiology, Garfield Memorial Hospital, Washington, D. C. Cloth. $6.75. Pp. 130, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1953.

The arrangement of the material in this well-written monograph is such that each phase of this problem can be adequately followed. The series of roentgenograms of normal hips, taken in both anteroposterior and lateral projections on boys and girls, should be an extremely valuable reference. Nowhere else has such a series of hip films been compiled. The method of treatment of these hips, of internal fixation and active mobilization, is highly recommended. The results recorded by the authors are somewhat better than many others report, but this is probably due to the fact that they have used the criteria for treatment outlined in this book. It is of further interest that the number of cases of bilateral hip involvement has increased as a more critical evaluation of both hips has been given. The reported 40% bilateral involvement is higher than most previous authors report but is probably still short of the actual prevalence. This is an excellent reference book and should be of great value in comparing a slipped capital femoral epiphysis with the normal hip.

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Age and Achievement. By Harvey C. Lehman. Memoirs of American Philosophical Society held at Philadelphia for promoting useful knowledge, volume 33. Cloth. $7.50. Pp. 359, with 170 illustrations. Princeton University Press, Princeton, N. J., 1953.

In this notable and interesting book, a product of 20 years of careful research, the author explores the relationship between chronological age and the quality and quantity of achievement and establishes, for many fields of endeavor, the age level at which man's most creative work has been done. These cover such diverse fields as medicine, music, literature, art, philosophy, mathematics, business, statecraft, and athletic prowess. In general, an attempt has been made to assemble the best basic data on the subject of age and achievement that it has been possible to collect, and an incredible amount of factual information is presented in readily understood graphs and tables. Whatever else this book may reveal, it suggests that outstanding intellectual achievement depends far less on mere length of life or on the number of years a particular person has been working within a given field than might have been supposed. The data presented in this important book are so challenging in their implications as to exert presumably far-reaching effects on established patterns of thought in psychology and in education.

School Nursing in the Community Program. By Marie Swanson, R.N., M.A., School Nursing Consultant, Department of Public Health Nursing, National League for Nursing, New York. Cloth. $5. Pp. 543. The Macmillan Company, 60 Fifth Ave., New York 11, 1953.

"This book deals with the school child, his parents and teachers, the health department and other official and voluntary agencies, the community in which he lives and the nurse who works in his school. It portrays nursing as it is most effectively carried on in the schools today." Thus the author sets the stage for a detailed discussion of the nurse serving the school, the characteristics and relations of her position, and the community of interests within which she performs her services. The primary appeal of this volume is to nurses concerned in some way with a school nursing service. This book will probably have a marked influence on the development of school nursing in the future. It will be of secondary interest to the school administrator, the local health officer, and others responsible for the direction of nurses serving the school.

Though the nurse is the center of attention in this volume, the entire school health program is described and discussed as the setting for the nurse's services. This involves all of the persons concerned with child health in the school and the community and the cooperative relations between them and the school nurse in evolving a school health program. The five major subdivisions concern the community's part in the development and protection of children, the work of the nurse with school-age children, the nurse's part in individual pupil appraisal and assistance, the nurse's part in general health supervision and education, and work in special situations. A good index and a list of organizations and magazines make reference easier.

Cornell Conferences on Therapy. Volume Six. Edited by Harry Gold, M.D., et al. Cloth. $4. Pp. 287. The Macmillan Company, 60 Fifth Ave., New York 11, 1953.

This book presents a series of 15 conferences on therapy conducted at Cornell University Medical College by 57 participants. The conferences, each devoted to a single topic or theme, are divided into chapters presenting an edited record of the discussions and questions by the participants. The majority of the participants are members of the Cornell group, but authorities from other medical centers are also included. Some, but not all, of the conferences have already been published in the *American Journal of Medicine* or the *New York State Journal of Medicine*. A total of 76 similar conferences has also been published, partly in periodicals and partly in the five previous volumes of this book. The dialectic form of presentation is as interesting as it is instructive, and the present volume sustains the purpose of the conferences: to bring pharmacology and other essential basic knowledge into closer integration with clinical therapeutics. Sincere differences of opinion occasionally expressed reveal a critical approach to difficult problems.

Physicians in general and students of therapeutics in particular will welcome this new collection of the conferences in book form. A list of the conferences published in the preceding five volumes is included at the end. Lack of an index limits the usefulness of the book as a reference. A few minor errors occur that might have been avoided, for example, amphenicol for chloramphenicol on page 122. In some instances the use of brand in place of generic names for drugs is disappointing, e. g., Pentothal for thiopental on page 50.

Communicable Diseases: A Textbook for Nurses. By Albert G. Bower, M.D., F.A.C.P., Head of Department of Communicable Diseases, Los Angeles County General Hospital, Los Angeles, California, and Edith B. Pilant, R.N. Seventh edition. Cloth. $5.50. Pp. 640, with 83 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1953.

This book has been completely rewritten in the present edition. All subjects previously covered are again included, and new material has been added. All common communicable diseases are discussed in terms of definition, etiology, pathology, incubation period, symptoms, treatment, and nursing care. Other aspects, such as differential diagnosis, immunity, and complications and sequelae, are discussed where pertinent. Early chapters are devoted to aseptic technique, care of communicable diseases in the home, and public health control of communicable disease. Each chapter is followed by a series of questions and a reference list. A glossary of medical terms is included at the end. This book will serve the student nurse as a textbook and the graduate nurse as a reference. The discussions of the various diseases are more complete than those found in many other textbooks for nurses.

QUERIES AND MINOR NOTES

HAY FEVER AND ASTHMA

To the Editor:—*1. What is the incidence of bronchial asthma as a sequel of hay fever and how can it be prevented? 2. Is the all year around method of desensitization better than preseasonal desensitization? 3. Where can one find escape from ragweed pollen in the central northeastern part of the United States? Are there any relatively pollen-free areas in Illinois, Ohio, Indiana, Michigan, or Wisconsin? 4. What are the criteria of using corticotropin or cortisone? Is corticotropin (ACTH) or the "gel" here more indicated than cortisone? 5. Does air conditioning in an isolated room afford relief? 6. Does the ingestion of alcohol aggravate the symptoms of hay fever?* *M.D. Ohio.*

Answer.—1. The exact incidence of bronchial asthma as a sequel of hay fever is not known, but the general feeling is that about 40% of patients with hay fever sooner or later develop bronchial asthma unless they receive injections of the specific extracts of the offending pollens, either trees, grasses or weeds. These injections, if given adequately and in time, will almost certainly prevent the onset of asthma in at least 95% of cases. Unfortunately, the results as regards hay fever are not quite as good. The injection method is almost certainly the only specific and valuable method of treatment other than avoidance.

2. In the experience of many, the perennial method of treatment is far better than the preseasonal. This is because the dosages can be gradually raised, and the patients can usually reach much higher amounts if the injections are given all year round than if they are hurried and crowded into three or four months preceding the hay fever season. Many patients delay reporting for their peseasonal treatment, and this results in a lack of protection because the dosage cannot be raised high enough. (There are a few allergists who insist that they get equally good results with minimal or very moderate dosages.) The perennial method is also better in that the percentage of reactions seems to be distinctly less than when treatment is hurried and the doses are increased too rapidly.

3. The amount of ragweed pollen is distinctly less in the northern parts of Wisconsin and Michigan, as well as in the central and northern parts of Canada. Ragweed is practically absent in the Gaspé Peninsula. Ragweed is abundant all through Illinois, Ohio, Indiana, and lower Michigan and Wisconsin. Ragweed is practically absent west of the Rocky Mountains and in Miami, Fla. Elevated areas like the White Mountains have less pollen than the valleys, but they are not free from ragweed. Ragweed hay fever does not exist in Europe or in other continents.

4. Corticotropin or cortisone usually does give excellent relief both for ragweed hay fever and ragweed asthma. However, in the majority of patients who receive the hyposensitization treatment, these hormones are not necessary as the hay fever symptoms can usually be controlled, if necessary, by antihistaminic drugs. The hormones are advised in some patients who have severe symptoms and who report after the hay fever season has already started. In such cases, the use of cortisone in tablet form will often give excellent and prompt relief. There are the well-known precautions, as they cannot be used in certain conditions, especially peptic ulcer, pulmonary tuberculosis, and psychosis. They must be used cautiously, if at all, in patients with high blood pressure and diabetes.

Cortisone by tablet is probably better for those who have ragweed hay fever; the ACTH-Gel, with or without cortisone, can be used for the ambulant patients who have asthma and hay fever. If asthma is violent enough for hospitalization, intravenous administration of corticotropin, 20 units in a liter of 5% dextrose in water, 3 liters a day—is advised. This can be given by the continuous drip method, and in each liter 0.5 gm. of aminophylline should be added. This method almost always gives excellent results.

5. Air conditioning affords relief for hay fever provided the patient stays in the room with the machine. Relief ceases when the patient leaves the room. Unfortunately, if the air conditioning causes too severe a drop in temperature, the patient who has a tendency for asthma is apt to have the same symptoms even though he is in the air conditioned room. Many therefore believe that air filters are better than air conditioning for patients who have asthma from pollen.

6. It is reasonable to assume that ingestion of alcohol, which is a vasodilator, may aggravate the symptoms of hay fever. The alcohol might open the nasal passages, which would then become more receptive to the aggravating effects of the pollen.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

IMPOTENCE IN DIABETICS

To the Editor:—*Please discuss impotence, its mechanism, prognosis, and treatment in a young man with diabetes.*

Sal Citra, M.D., Bronx, N. Y.

Answer.—Impotence is not uncommon in nondiabetics. A specialist in this field writes, "Failure of erection or ejaculation in intact males under fifty is, I believe, always psychological, except in cases of asthenia from starvation or disease. In men over sixty such impotence is so common as to be considered normal; but even in such, I rather think it is often due basically to a psychological, not a truly hormonal, change." Obviously asthenia is common in diabetics, although neurasthenia and hypochrondria are less frequent, because the patients are concretely occupied with treatment.

The mechanism of impotence in diabetes could be due to pathological changes in the sexual glands, to alteration of the secretion of the pituitary gland, or to dysfunction of one or the other on account of the diabetic state. Against the latter cause is the fact that impotence occasionally accompanies the onset of diabetes, and against a pathological change is the fact that usually there is no obvious disease or deformity in the genital tract. The condition appears to be functional rather than organic. Against its being of neuritic origin is its usual permanence, whereas with diabetic neuritis, peripheral or otherwise, improvement is almost invariable. Further studies on the activity and production of the 17-ketosteroids in diabetics with and without potency might give new information about impotency in diabetes.

The incidence of impotence in diabetes is unknown, but it is a common symptom, even, according to writers such as Von Noorden and Isaac, reaching 53% in patients who attain a suitable age. Naunyn states that, in men with diabetes, impotence is one of the most constant symptoms. Yet it can be absent, and instead of it there may be temporarily an increased sexual desire; Von Noorden and Isaac noted the latter in only 1% of their patients. Impotence may be a premonitory symptom, but in such cases the actual date of onset of the disease is often problematical, because such early symptomatology applies to the middle-aged rather than to the young patient. It is not always the consequence of exhaustion or loss of sugar in the urine, since it occurs in well-nourished diabetics with very little excretion of sugar. Yet in only moderately severe cases, sexual capability sometimes returns when glycosuria disappears or decreases, but this is exceptional in severe cases. Atrophy of the testicles has been observed in young men. On the other hand, Griesinger observed patients in whom impotence may have been present in severe diabetes even though, at autopsy, there were abundant and actively moving sperma-

tozoa in the testes, thus showing that the impotency was not due to the destruction of spermatozoa. In hemochromatosis with diabetes, testicular atrophy affords a well-known anatomic basis for impotence.

Psychic factors, such as anxiety and fear of the future with respect to vision, arteriosclerosis, and gangrene, have special importance in diabetic patients. Anxiety, nerve tension, and depression are well-known factors for impotence among nondiabetics. They do not, however, seem adequate to explain the impotence seen with such frequency in young diabetic patients. Impotence in a man, however, is not invariable after 30 years of diabetes. The wife of one such man recently gave birth to their seventh child. Moreover, the wife of another man with diabetes of 34 years' duration gave birth to twins after 30 years and a seventh child after 33 years. The first man was carefully treated from onset although the second received unusual, but not such careful treatment.

The prognosis for relief of the impotence is dubious, but instances of recovery even after many years do occur. Whether these are due to psychiatric or medical therapy is uncertain. Treatment is unsatisfactory but testosterone in 25 mg. doses, injected twice weekly, has occasionally produced surprising results. This is especially true even in hemochromatosis in which atrophy of the testes is noted, together with marked diminution in the size of the prostate. The question remains, however, as to whether the improvement was due to improvement of the general physical condition or to actual relief of the impotence.

The effect of impotency on the patient psychologically far, far outweighs the physical harm. Failure to recognize the possibility of impotence and its later development undoubtedly wreck many marriages. A man will put up with the illness of his wife "for better or worse," but a woman is not inclined to overlook impotency when it develops in her husband, even though there have been children and middle life has been reached.

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STERILE ABSCESS FOLLOWING IMMUNIZATION

TO THE EDITOR:—*During 15 years of pediatric practice I have encountered an occasional child in whom a sterile abscess developed after an injection of a routine immunization. I now have a patient with a history of a sterile abscess following every routine immunization injection. What can be done to prevent its recurrence?*

D. L. Weinstein, M.D., Washington, D. C.

This inquiry was referred to two consultants, whose respective replies follow.—ED.

ANSWER.—Abscess formation can usually be avoided if three precautions are taken. 1. Needles and syringes should be autoclaved; boiling for at least 10 minutes may be sufficient. 2. The skin should be cleansed and disinfected, and the stopper of antigen container should be given same treatment. 3. The outside of the needle should be clean, and 0.1 to 0.2 cc. of air should follow expulsion of the antigen; a sterile abscess may be due to outside coating of needle with alum. Although only the third precaution may apply to your requirements, the other two are sometimes neglected. As a last resort fluid toxoid may be substituted for alum precipitated toxoid.

ANSWER.—In both fluid and alum precipitated pertussis vaccine, local and general reactions may occur. The local reactions are indurated nodules at the site of the injection that occasionally cause a migration of leukocytes to the area resulting in fluctuation and a sterile abscess. This is due to pertussis bacillus protein and endotoxins, depending on individual tissue susceptibility. In a few instances, this may be due to insoluble alum acting as a tissue irritant. Severer reactions tend to develop in older children. The injections are best given intramuscularly or deep into the subcutaneous tissue. Care should be taken to avoid depositing the vaccine immediately beneath the skin, in the upper part of the subcutaneous layer of fat, or in sites that have received previous injections. The same is true of both fluid and alum precipitated diphtheria toxoid. The reactions are accounted for mostly by hypersensitiveness to diphtheria bacillus proteins of the toxoid preparations. This sensitization is acquired through contact with the diphtheria bacillus as the person becomes older, or it may develop through previous injections of toxoid. This again becomes more marked in older persons.

Local or systemic reactions may be observed after injections of either the plain tetanus toxoid or alum-precipitated toxoid. These as a rule are never so severe since the person is not so hypersensitive to the tetanus bacillus proteins as he may be to the diphtheria bacillus proteins, despite previous contact with the tetanus bacillus. This also applies to combined immunizations. Diphtheria immunization should be preceded by a Schick test and should be given only to those susceptible after a Moloney test for sensitivity is known to be negative; if the reaction to a Moloney test is positive, immunity may be acquired by giving smaller injections over a longer period of time.

METHODS FOR STAINING EOSINOPHILS

TO THE EDITOR:—*I have been using Randolph's staining solution, which should color eosinophilic granules red and those of other leukocytes blue. I have been using either equal amounts of the two solutions or four parts of solution 1 and six parts of solution 2, and I have observed a 21 hour waiting period. Yet, I cannot differentiate the colors. What proportions do you advise me to use? I have heard about Hinkleman's solution. Which do you consider the better of the two?*

Guzman Casanova, M.D., Encrucijada, Cuba.

ANSWER.—The following methods are satisfactory for determination of the absolute eosinophil count:

1. Dunger's method (described in *Blood* **3:**755, 1948): With this method the eosinophils are stained vividly, but precise timing is required because of the dissolution of leukocyte membranes, and the method is, therefore, convenient only with venous blood.

2. Randolph's method (*J. Allergy* **15:**89, 1944): While suitable for capillary or venous blood, this method is cumbersome and does not allow as clear a distinction between eosinophils and other leukocytes as do other methods.

3. Henneman's modification of Randolph's method (*J. Lab. & Clin. Med.* **34:**1017, 1949): This method employs a diluting fluid made up of 0.05 gm. of phloxine, propylene glycol, and 50 ml. of distilled water, which simplifies Randolph's technique.

4. Hinkleman's method: The solution used (0.5 gm. of yellow eosin, 0.5 ml. of concentrated formaldehyde [Formalin], and distilled water to make a total volume of 100 ml.) stains eosinophilic granules black, while other than eosinophilic leukocytes appear as shadows. This method may be used on either capillary or venous blood.

5. Rud's method (*Acta psychiat et neurol.*, supp. 40, 1947): A solution composed of 0.1 ml. of 10% magdala red, 6 ml. of acetone, 14 to 20 drops of 10% sodium carbonate, and 45 ml. of water is used. While the staining obtained is excellent, the chamber must be filled promptly and evaporation prevented.

6. Pilot's method (*Am. J. Clin. Path.* **20:**870, 1950): This method employs a solution consisting of 50 ml. of propylene glycol, 40 ml. of distilled water, 10 ml. of 1% phloxine in water, and 1 ml. of 10% sodium carbonate. This is suitable for capillary or venous blood, and counting chambers may be filled at leisure and the cells counted any time within 15 minutes.

7. Manner's method (*Brit. M. J.* **1:**1429, 1951): A solution containing 50 gm. of urea, trisodium citrate, distilled water to make a total volume of 100 ml., and 5 ml. of a 2% aqueous solution of phloxine is employed.

While any of the above methods is satisfactory, the last two are preferred, since they may be used on either capillary or venous blood, other leukocytes are lysed and eosinophils are easily seen, no critical time intervals must be adhered to, and these stains are easily made up. Counting chambers of large capacity (Fuchs-Rosenthal or Spiers) also simplify the procedure. With any technique, the blood cells should be counted within four hours of the time the blood is drawn.

SYMPTOMS FOLLOWING GASTRECTOMY

TO THE EDITOR:—*Ten years ago a 27-year-old man in excellent health complained of gradual loss of weight, fulness after meals, nausea, and some vomiting for several months. X-ray examination revealed a filling defect of the pylorus, no free acid even after administration of histamine, and gastroscopic signs of a few small superficial ulcerations. Because of x-ray evidence of malignancy, a subtotal gastrectomy, posterior polya type, was done. Examination of a section obtained at surgery showed grade three ulcerative gastritis. For the next six years there was a severe dumping syndrome with inability to eat eggs, cream, and very sweet mixtures. This was coupled with severe burning, which kept him up nightly and amazingly enough was occasionally relieved with aluminum hydroxide gel (Gelusil), even though he had no free acid. Vomiting of bile, which regurgitated nightly into the lower esophagus, gave relief. Normocytic hypochromic anemia developed but responded well to treatment with vitamin B_{12} and folic acid; he had an increase in weight and reduced upper gastric burning. X-ray examinations twice yearly have shown no abnormalities, with open stoma and fairly normal mucosa. Since he is disqualified for life insurance and it is feared that the histamine-fast achlorhydria may be a precursor of carcinoma, what information on prognosis can you give? There is no history of carcinoma in the family except for an 83-year-old father with stomach ulcers. How would you handle this case?*

M.D., Michigan.

ANSWER.—1. This patient will require further diagnostic work-up. Since he has a history of intolerance to "very sweet mixtures" and nocturnal burning and vomiting, there is a suggestion of vagotonic insular imbalance. An intravenous glucose tolerance test and a Hollander test would verify this. Incidentally, the Hollander test, if negative, would possibly rule out his presumed achlorhydria. Relief of symptoms with aluminum hydroxide gel (Gelusil) and his nocturnal burning suggest the presence of acid despite the fact that none has been found heretofore. His nocturnal vomitus should also be examined for acid because bile, in the presence of free acid, turns from yellow to green. If the vomitus is green, free acid is present. 2. It is the consensus among gastroenterologists that there is a fundamental relationship between chronic gastritis and carcinoma of the stomach, but no statistics are available at this time. A definite risk or age of occurrence of carcinoma in this patient cannot now be stated. 3. This man should have frequent (at least six daily) small feedings of a bland, convalescent ulcer diet. Since he apparently is sensitive to sugars, he should be allowed no free sugar. Since Gelusil has at times made him comfortable, he should take it regularly 45 minutes to 1 hour after meals and after his bedtime feeding. He should have a glass of milk and some crackers, as well as aluminum hydroxide gel, at his bedside to relieve his nocturnal burning, if it should continue. He should be given one of the anticholinergic drugs before meals and at bedtime. It is unusual that vitamin B_{12} and folic acid should improve a hypochromic anemia; however, 30 mg. of vitamin B_{12} should be given parenterally once every two to four weeks, depending on the patient's needs. This will be determined by careful serial hemograms. He should have repeated upper gastrointestinal x-ray series every three to six months and, if possible, yearly gastroscopy. His stool should be examined for occult blood frequently.

PREVENTION OF FUNGUS INFECTIONS OF FEET

TO THE EDITOR:—*Applicants for work in an industrial plant are examined in rooms where their bare feet are exposed to contact with a polished terrazzo floor. Fungus infection of the skin of the feet among these men is common. Does the above procedure spread this infection?*

M.D., California.

ANSWER.—According to present concepts, the danger of transmitting active or symptomatic attacks of fungus infections of the feet by walking over floors is minimal (*Arch. Dermat. & Syph.* **45**:670 [April] 1942). Ordinary washing of the floor and routine cleanliness should be more than sufficient to take care of the problem of new infections from the floors. To reduce, as far as possible, any activation of latent infection or flare-ups, the men should wear properly fitting, well-ventilated footgear and use a standard mild dusting powder between the toes and in the socks. Routine measures for this form of prophylaxis, as well as other logical approaches, have been set forth in detail in an article entitled "Athlete's Foot" (*Hygeia* **19**:522 [July] 1941 [reprinted in 1951]). Newer studies now in progress have all, thus far, supported the concept that the role of fungi in water, floors, clothing, and footgear is negligible in the production of attacks of dermatophytosis (athlete's foot). Quiescent infections flare up principally when moisture, humidity, friction, and other factors produce conditions that allow the fungi to multiply more rapidly and reduce the local resistance of the skin areas to their pathogenic action.

EDEMA OF UNKNOWN ORIGIN

TO THE EDITOR:—*In regard to the discussion of edema of unknown origin in Queries and Minor Notes, Aug. 1, 1953, I have observed three patients, all women, who had a certain type of edema while undergoing psychotherapy. The distribution of this edema was in the extremities, unilateral, and of varying intensity. Laboratory tests failed to show any deviant values. The usual diuretic regimen and use of antihistaminic preparations and thyroid extract were of no avail. Psychologically all three patients were suffering from neurotic depression with hysterical features. The swelling regularly followed a frustrating situation in which the patient's character make-up made expression of anger impossible. Instead these women became depressed. It appears that the edema is a form of weeping of the tissues similar to lachrymation or rhinorrhea. The ability of the patient to abreact his pent-up anger without any disturbance of the conscience is followed by the disappearance of the edema. In one patient an edema of the ankle vanished in about 45 minutes when under hypnosis she wept. For this reason I would suggest a careful search for neurotic depression in all patients with unexplained edema.*

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BRAIN INJURIES

TO THE EDITOR:—*In Queries and Minor Notes of Sept. 26, 1953, the question about low diastolic blood pressure in certain types of brain injury is answered as follows: "A lowered diastolic pressure is not commonly seen in persons who have had an intracranial cerebral injury and is not to be correlated with such an injury." H. E. Mock in his book, "Skull Fractures and Brain Injuries" (Baltimore, Williams and Wilkins Company, 1950, p. 704) writes that in 1929 he described a group of patients who were referred to him because of mild, persistent, postcerebral injury symptoms. Few of this group had definite physical symptoms except bradycardia and a rather persistent low diastolic blood pressure, often below 60 mm. Hg. The only other positive finding was increased spinal fluid pressure. A common factor in all their histories was a short and inadequate treatment without direct or indirect spinal fluid drainage. Since 1929 Dr. Mock has observed many similar cases. Low diastolic pressure is also of great importance in acute intracranial injuries. The treatment of the condition is bed rest, administration of hypertonic solutions for dehydration, and, when indicated, repeated lumbar punctures.*

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